

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1340.—VOL. XXXI.

LONDON, SATURDAY, APRIL 27, 1861.

(WITH SUPPLEMENT) { STAMPED.....SIXPENCE.  
UNSTAMPED..FIVEPENCE.

M R. JAMES CROFTS, SHAREBROKER,  
No. 1, FINCH LANE, CORNHILL. (Established 17 years.)

M R. JAMES LANE, No. 44, THREADNEEDLE STREET,  
LONDON, E.C.

JAMES LANE has FOR SALE, at nett prices:—10 Alfred Consols, £2%; 10 Ashburton United, £14; 20 Arthur, 7s. 6d.; 25 Benthall Wood, 8s. 6d.; 10 Butler and Bassett, 11s.; 10 Crown, 9s. 6d.; 5 Cargol, £17; 20 East Devon, 32s. 6d.; 10 Gonamena, £2%; 20 Gunnis Lake (Clitters), 6s.; 20 Great Mowbray, 15s.; 10 Great Martha, 16s. 6d.; 20 Molland, 1s. 9d.; 20 Great Alfred, 15s.; 10 Hington Down, £2%; 20 Kelly Bray, 2s.; 25 Great Retallack, 26s.; 25 Lady Bertha, 5s. 6d.; 20 New Wheal Frances, 18s.; 2 North Roskear; 50 North Hailebeagle, 40s.; 50 North Minera, 3s.; 4 North Treskerby, £24; 20 North Downs, £3%; 10 North Phenix, £17s.; 20 New Treleigh, 45s.; 2 Providence, £28; 20 Polgar; 100 Penhaw, 9d.; 20 Redmoor, 4s. 6d.; 50 Sortridge, 10s.; 20 Sigford Consols, 11s.; 20 Trumpet United, 14s.; 2 Wendron Consols, £17s.; 20 West Wadron, 8s. 6d.; 10 Worthing, 14s. 6d.; 40 Vale of Towy, 8s. 6d.; 5 Wheat Hare, £2; and 3 West Rose Downs, £13.

PETER WATSON, ENGLISH AND FOREIGN STOCK,  
SHARE, AND MINING OFFICES,  
79, OLD BROAD STREET, LONDON, E.C.

Telegraphic messages to Buy or Sell Mine Shares punctually attended to.

M R. PETER WATSON is instructed to PURCHASE and SELL  
the UNDERMENTIONED MINE SHARES, subject to a charge of 2 per cent.,  
for immediate delivery and cash payment:—

DIVIDEND MINES.

No. of PURCHASER.	No. of shares.	Mines.	Price.	No. of SELLER.	Mines.	Price.
5 Alfred Consols	2 0 0	10 Alfred Consols	£2 12s. 6d.	19 Alfred Consols	£2 12s. 6d.	0 15 6
18 East Caradon	18 10 0	75 Drakes Walls	0 15 6	9 Ding Dong	9 18 9	0 9 0
200 Kelly Bray	1 0 9	3 Ding Dong	9 18 9	1 North Roskear	101 0	1 North Roskear
1 North Roskear	17 15 0	1 East Bassett	101 0	5 East Gunnis Lake	£1 1/2	10 East Caradon, £19%
1 Botallack	—	10 North Dolcoath	0 10 0	25 No. Wh. Robert, 15s. 9d.	25 No. Wh. Robert, 15s. 9d.	5 East Gunnis Lake, £1 1/2
3 Providence	38 10 0	5 Rosewarne and Herland	0 5 9	100 Sortridge Cons., 9s. 3d.	100 West Tolcarne, 12s. 6d.	20 Gunnis Lake (Clitters), 6s.
1 Bassett	96 0 0	25 East Caradon	19 5 0	1 Levant (offer wanted)	18 s. Wh. Frances, £14 1/2	20 Great Mowbray, 15s.
1 Butler	105 0 0	1 Rosewarne	24 0 0	5 New Wh. Frances, 10s. 9d.	1 Wheal Clifford, £185.	25 Great Retallack, 26s.
5 Trelawny	13 0 0	10 Ludcott	3 19 0	5 Stray Park	£36 1/2	20 Great Retallack, 26s.
5 Great Fortune	8 5 0	10 Grylls	3 5 0	1 North Roskear	1 18 9	20 North Tolcarne
5 Par Consols	8 10 0	50 Wrey	0 13 9	10 North Frances	£4 1/2	20 North Tolcarne
3 East Bassett	100 0 0	1 South Frances	140 0 0	30 North Minera (20s. pd.)	£1 1/2	20 North Frances
30 Tamar Consols	1 17 6	4 Herward United	18 0 0	1 North Roskear	1 18 9	20 North Minera (20s. pd.)
3 Wheal Margaret	—	25 Tamar	2 0 3	100 South Seton	£6 6s. 9d.	20 North Minera (20s. pd.)
2 Wendron Consols	16 0 0	2 Providence	—	50 New Frances	£3 6s. 9d.	20 North Minera (20s. pd.)

PROGRESSIVE MINES.

No. of PURCHASER.	No. of shares.	Mines.	Price.	No. of SELLER.	Mines.	Price.
16 East Russell	6 2 6	50 East Grenville	£3 1 6	100 So. Carn Brea	£3 6s. 9d.	10 South Gorland (last call paid).
500 Lady Bertha	1 7 6	150 Wheal Unity	0 9 0	10 Kelly Bray	20s. 9d.	100 South Gorland (last call paid).
1 North Treskerby	22 10 0	3 Stray Park	36 15 0	50 Lady Eliza	7s. 9d.	100 South Gorland (last call paid).
1 Botallack	1 2 6	20 Southhill Hill	1 18 9	40 Lewis	4s. 6d. (including last call of 2s.)	100 South Gorland (last call paid).
15 Treskerby	1 10 0	5 South Bassett	15 0 0	5 Mark Valley	£7 6s. 9d.	100 South Gorland (last call paid).
10 Rosewall Hill	1 15 0	1 Bryn Gwilog	45 0 0	1 Mary Ann	£11 19s.	100 South Gorland (last call paid).
10 Camborne Vean	2 0 0	50 Merlin	0 9 0	100 Tolvadden	£1 16s. 3d.	100 South Gorland (last call paid).
25 East Grenville	1 9 0	15 Wheal Harriett	1 18 9	20 Trelawny	£13 18s. 9d.	100 South Gorland (last call paid).
25 New Frances	0 10 0	20 Mill Pool	0 10 0	20 Treleasey	16s. 9d.	100 South Gorland (last call paid).
20 South Condorrour	0 12 0	10 East Alfred	1 18 0	20 Wheal Clifford	£187 1/2	100 South Gorland (last call paid).
5 West Stray Park	4 15 0	2 North Crofty	0 8 0	10 Wheal Crebor	9s. 6d.	100 South Gorland (last call paid).
5 East Carn Brea	—	50 New Frances	0 10 6	5 Par Consols	£3 6s. 9d.	100 South Gorland (last call paid).
25 Buller and Bassett United	—	200 Camborne Vean	—	1 Providence	£83 1/2	100 South Gorland (last call paid).
20 Gawton	—	50 Merlin	0 8 0	5 Wh. Grenv.	£2 19s. 9d.	100 South Gorland (last call paid).
5 North Buller	3 3 0	50 Wheal Harriett	1 18 9	5 Pendene	£6 9s. 9d.	100 South Gorland (last call paid).
50 Badnick Consols	1 1 3	5 Garlinda	6 0 0	10 Redmoor	3s. 6d.	100 South Gorland (last call paid).

SELLER.—(Continued).

Bankers: Union Bank of London.

M R. LELEAN, STOCK AND SHARE DEALER,  
4, CUSHION COURT, OLD BROAD STREET, LONDON, E.C.

FOR SALE, ONE HUNDRED SHARES in EAST  
TRESKERBY, at 35s. per share (£3 paid). This is a good speculation, and highly  
recommended.—Apply to Mr. LELEAN, 4, Cushion-court, Old Broad-street, E.C.

M R. THOMAS SPARGO, SHAREBROKER,  
224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C.  
Commission, 2 1/4 per cent.

M R. T. ROSEWARNE, 81, OLD BROAD STREET,  
LONDON, has FOR SALE:

Caistors Consols, 12s. 6d. Sortridge, 10s. 6d.  
Creiske, £2%. Devon Great Cons., £335. Gawton United, 6s. 6d.  
Drake Walls, 18s. 6d. Lady Bertha, 28s. 6d.  
East Caradon, £19%. North Robert, 15s.  
East Carn Brea, £28 1/2. North Treskerby, 15s.  
East Russell, £6 1/2. North Tolcarne, 12s. 6d.  
East Grenville, £1 1/2. North Treleawny, 7s. 6d.  
North Treskerby, £23 1/2. North Treleawny, 7s. 6d.  
Pelym Wood, 12s. 6d. North Robert, 15s.

And is a BUYER of—  
Bedford Consols.

Birch Tor and Vilifer.  
April 26, 1861.

M R. JAMES HUME, SHAREBROKER, 74, OLD BROAD  
STREET, LONDON.

The "Mining Share Monitor" for April now ready. The most reliable and valuable  
information on East Caradon, East Carn Brea, Cudlins, and the leading mines of the day.  
Free for six postage stamps.

M R. FREDERICK EDMUND BLYTH, MINING  
SHAREBROKER, 12, ST. MICHAEL'S ALLEY, CORNHILL, E.C.

SHARES FOR SALE, free of any commission:—  
40 Great Alfred, 12s. 6d. 25 East Caradon, 18s. 3d.  
20 Camborne Vean, £2 1/2. 25 North Treskerby, 15s.  
35 Michell, 9s. 6d.

M ESSRS. R. HORLEY AND CO., SWORN STOCK, SHARE,  
AND MINING BROKERS, 45, CORNHILL, E.C. (late of Royal Exchange-buildings),  
continue to TRANSACT EVERY DESCRIPTION OF MINING BUSINESS,  
and are in a position to obtain reliable information respecting all dividend and progressive mines.

N.B.—Messrs. HORLEY and Co. publish a Weekly Mining List, with the closing prices,  
every Wednesday, and will be most happy to forward the same ( gratis) on application.

M R. E. GOMPERS, MINING OFFICE,  
3, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.

BUSINESS TRANSACTED IN BRITISH AND FOREIGN STOCKS AND SHARES.  
Terms, 1 1/4 per cent.—Bankers: London and Westminster Bank.

M R. GEORGE BUDGE, 4, ROYAL EXCHANGE-BUILDINGS,  
LONDON, has FOR SALE:—100 East Grenville, £2 16s. 25 Great South  
Tolcarne, £5%; 2 West Sharp Tor; 40 Angarrack, 3s.; 50 Great Retallack, 27s. 6d.; 100  
Wheal Trevlyan; 3 East Bassett, £100; 4 Providence, £40%; 50 Wheal Grenville;  
3 West Caradon, £7 3s.; 2 South Wheal Frances, £137 5s.; 50 South Condorrour,  
14s. 6d.; 5 North Treskerby, 12s. 6d.; 5 Silver Rake, £18%; 36 Tolcarne, £2 13s. 6d.;  
Kelly Bray, £28 1/2; 50 Trumpet United, 14s. 6d.; 100 Wheal Harriett; 5 Old Tolcarne, £19%;  
20 Trevole, £5 2s.; 10 East Caradon, 18s. 6d.; 5 South Bryn Gwilog; 3 Bryn Gwilog; 50  
North Minera, 3s.; 50 Buller and Bassett; 50 Cefn Cilien, 7s. 6d.; 5 Billins, £19%; 20  
Crane; 100 Dale, 18s. 6d.; 40 East Alfred; 50 South Caradon Wheal Hooper, 18s.;  
3 South Tolcarne, £50 1/2; 20 St. Day United, 17s.; 25 Buller and Bertha; 40 Treleawny,  
16s.; 50 United Mines (Tavistock); 20 West Trevlyan; 50 Great Wheal Alfred, 18s.;  
70 Great Wheal Martha, 18s.; 10 Caradon Consols, £10 1/2.

LONDON MINE AGENCY (ESTABLISHED 1848).  
REMOVAL.—Mr. PEET'S MINE AGENCY is REMOVED to  
62, MOORGATE STREET, LONDON, where information may be had upon all  
mines, British or foreign.

Office of reference to mines. Reports furnished from competent and confidential agents.  
Loans upon shares, and stocks purchased or sold on the usual commission.

Note.—A few gentlemen may now join in the purchase of a mine, with great chance  
of a successful return for small outlay.

Mr. PEET calls attention to the SILVER BANK MINES, as a valuable property, and will  
furnish particulars on application. These shares will soon be at a high premium upon  
the merits of the mines, tested by sales of ore.  
62, Moorgate-street, London, February, 1861.

M ESSRS. THOMAS PENROSE and THOMAS PRICE  
UNDERTAKE ASSAYS and ANALYSES of EVERY DESCRIPTION OF  
MINERAL PRODUCT, FUEL, and MANURES, at Messrs. Richardson and Co.'s Assay  
Office and Laboratory, Copper Ore Wharves, Swansea.

G E O R G E M O O R E,  
1, CROWN COURT, THREADNEEDLE STREET.

GEORGE MOORE will SELL the following SHARES, or any part, to-day, at quoted  
prices, FREE OF ANY COMMISSION:—  
1 East Bassett, £101. 50 North Dolcoath, 6s. 3d.  
1 East Caradon, £19%. 1 North Roskear, £18%.  
5 East Gunnis Lake, £1 1/2 100 West Tolcarne, 12s. 6d.  
10 Gl. So. Tolius, £4%. 100 South Seton, £34 1/2.  
1 Levant (offer wanted) 18 s. Wh. Frances, £14 1/2.  
50 New Wh. Frances, 10s. 9d. 20 Wheal Clifford, £185.  
In any business that George Moore is favoured with, in which he is the buyer, he  
will give CASH ON RECEIPT OF TRANSFER.

JAMES HERRON has FOR SALE the following SHARES, at  
the prices quoted, and FREE OF COMMISSION:—

10 Alfred Cons., £2 3s. 9d. 50 Lady Bertha, 28s. 9d.  
10 Anglo Mexican Min., £13 10s. 10 Kelly Bray, 20s. 9d.  
10 Brynford Hall, £25. 50 Lady Eliza, 7s. 9d.  
5 Bryn Gwilog, £40%. 40 Lewis, 4s. 6d. (including last call of 2s.)  
20 Bottle Hill, 20s. 9d. 5 Mark Valley, £7 6s. 9d.  
10 Bryant, 20s. 9d. 1 Mary Ann, £11 19s.  
20 Buller and Bertha (last call paid). 100 South Gorland (last call paid).  
100 Cefn Cilien, 8s. 100 So. Lady Bertha, 3s. 9d.  
200 Charlotte United, 16s. 9d. 100 Tamar Con., £1 18s. 9d.  
100 Cobrie, £25. 100 Tavy Consols, 2s. 9d.  
100 Cornish Cons., 18s. 9d. 100 Wheal Seton, 2s. 9d.  
100 Cromwell, 18s. 9d. 100 Wheal Trevlyan, 2s. 9d.  
100 Cullombe, 18s. 9d. 100 Wheal Unity, 18s. 9d.  
100 Darnley, 18s. 9d. 100 Wheal Wheal, 18s. 9d.  
100 Devon Union, 18s. 9d. 100 Wheal Wheal, 18s. 9d.  
100 Fowey Consols, 18s. 9d. 100 Wheal Wheal, 18s. 9d.  
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## ON THE RISCA EXPLOSION.

[READ BEFORE THE ROYAL SCOTTISH SOCIETY OF ARTS, EDINBURGH, MARCH, 1861.]

BY RALPH MOORE, MINING ENGINEER, GLASGOW.

On the morning of Saturday, Dec. 1 last, an explosion of fire-damp occurred in the Black Vein of the Risca Coal and Iron Company's works at Risca, a village seven miles north from the shipping port of Newport, South Wales, whereby 134 persons out of 200 were killed.

At every recurrence of these disasters, involving as they do loss of life and property, public attention is strongly directed to them, and there usually follows an amount of correspondence in the public papers—comments upon the disaster, suggestions for the relief of the sufferers, and remedies for the prevention of such accidents. While a great proportion of these are unsuitable, it cannot be denied that some of them contain useful information, and that, at all events, their tendency is to do good. The suggestions of scientific men are always valuable, but if their attention were directed by practical men to the details of the circumstances which caused the explosion, instead of collecting them from the imperfect accounts in the press, they would scarcely fail to be more valuable.

With the view of bringing before the Society the facts necessary to elucidate an explosion of fire-damp in a mine, I have endeavoured to collect and put into shape the various features of that which occurred at Risca, in the hope that I may be able to explain the subject so that scientific men may point out some department where science can be brought to bear on behalf of the poor miner in his dangerous toil, and also to insure to the capitalist greater security for the property he may have at stake; for while the general sympathy goes with the persons who are injured, the relatives of those who are lost, we must never forget that the proprietor of the mine is also a great sufferer, and it often happens, while he bears his loss in silence, he has, in addition, to bear an amount of unmerited obliquity. I propose, in the first place, to narrate shortly the usual mode of ventilating mines; next, to show the position of matters at Risca, the mode of ventilation adopted, and the manner in which it is carried out; then to offer some suggestions for improvements; and, lastly, to suggest a mode of providing for those deprived of the means of subsistence by these catastrophes.

All mines give out, more or less, two inconvenient products—gas and water. Gas issues from the pores of the strata as the fresh surfaces are exposed, and if allowed to accumulate becomes injurious or dangerous to those coming in contact with it. The gas so evolved is either carburetted hydrogen gas, or carbonic acid gas; but it is possible that other gases may exist, such as sulphuretted hydrogen, from the decomposition of pyrites. If carbonic acid (choke-damp) be emitted it is hurtful, and often fatal, even while forming only 5 per cent. of the atmosphere which the miner breathes; but even in a smaller proportion it prevents his light from burning, and thus gives timely warning for him to leave. If, on the other hand, the gas present be carburetted hydrogen (fire-damp), from 6 to 20 per cent. of it in common air produces an explosive mixture, which in an unguarded moment comes upon the miner's lamp, and causes those fearful explosions which we hear of time to time, and of which that at Risca was a prominent instance. Both the gas and the water, however, must be got rid of; the latter must be completely drained off, or it finds its level, and speedily puts a stop to all operations. The capitalist counts the cost, and acts accordingly, for the mine must be cleared of water. With regard to the gas exhausting and filling the mine, the case is different. Gas does accumulate, but only to a certain extent will it find its level,—to a certain extent it can be kept confined, and hence when the arrangements for its complete withdrawal are found insufficient, instead of increasing or enlarging the appliances, many parts, in ignorance, thoughtlessness, or neglect, set about to find devices for confining it, and keeping only that part clear of gas where the workmen are engaged.

The mode adopted for clearing away these noxious gasses from mines is to send through the mine such a quantity of atmospheric air as shall sweep away or dilute them to such an extent that the workmen may enter with safety. The quantity of air necessary depends upon the size of the mine, the number of men employed, and especially the quantity of gas eliminated; it varies from 4000 or 5000 cubic feet per minute up to 200,000 ft. Few of our Scotch mines require more than 10,000 cubic feet per minute, while the Hetton Colliery, Durham, requires 200,000 ft. To illustrate this more forcibly, a current of air passing through a common door-way, 7 ft. high and 3 ft. wide, at the rate of 2 ft. per second, or  $\frac{1}{2}$  mile per hour, will ventilate many Scotch coal mines. The current for ventilating the Hetton Mine would pass through this hall (supposing it to have a sectional area of 600 ft.) at the rate of 5 ft. per second, or more than 3 miles per hour. The current which passed through Risca would pass through this hall at the rate of four-fifths of a mile per hour, and this must be continuously kept up by artificial means, of which there are many varieties, such as fans, air-pumps, and the paraffining furnace. The shaft at which the air enters is called the downcast, the passages leading from it to the faces are called the intake air courses, and those to the shaft by which it ascends to the surface the return air courses, and the shaft the upcast shaft. These passages are, as often as possible, made use of for drawing the materials from the mine, and doors are put on when necessary to afford the required communication, and stoppings when communication is no longer necessary. The amount of exhaustion is sometimes as high as 4 in. of water, or 20 lbs. per square foot, when an air-pump is employed, but with the furnace it is little more than 1 in.; but as a general rule, whatever be the amount of exhaustion, the passages should be of such an area that the quantity of air required may pass through them at a velocity not exceeding 7 ft. per second. It follows that by increasing the area of the passages and the ventilating power any quantity of air may be sent through a mine.

We will now be prepared in some measure to understand the state of matters at Risca at the time of the explosion. The establishment for working the Black Vein consists of three pits—first, an upcast pit, used solely for ventilating purposes, having an area of 125 square feet and 70 yards deep; next (about 400 yards to the dip), a winding shaft, of the same dimensions, 148 yards in depth; and, thirdly, a pumping shaft, which was not used for ventilation at all. These shafts passed through the Big Vein, a seam of 15 ft. thick, unworked above the Black Vein workings, and the strata from it down to the Black Vein was of soft brittle shale. The seam dips to the north-west at an average of 1 in 7, and the workings were all to the dip, employing about 300 men, who raised from 200 to 300 tons of coal daily, which were drawn up to the winding pit bottom by a steam-engine placed there.

The mode of working was that commonly practised in South Wales, and is found very suitable for the coal measures there. There was an incline plane, or slope, proceeding from the pit bottom of the winding shaft to the north-west. This slope was 650 yards long, and from it, at intervals of 140 yards, branches started off to the east and west. These were respectively called the "first east level," the "first west level," the "second east level," and so on. The last, the "fourth east," branched off 100 yards from the bottom of the slope. Each level worked out the block of coal to the rise of it in the following manner:—At intervals of 90 yards narrow mines, called cross-headings, were driven to the south up to the level above, and off one side of these cross-headings stalls were branched every 12 yards. The levels and cross-headings were merely preparatory works, the stalls being where the workmen were clustered; they were 5 to 6 yards wide, and were driven over within 12 yards of the next cross-heading, except one, which was holed narrow, for ventilating purposes. Narrow places, called splay-holes, were also put through at irregular intervals between the stalls, for the same purpose. The seam of coal was  $\frac{1}{2}$  ft. thick, in two or three partings, and had a very bad roof:  $\frac{1}{2}$  ft. of coal was left on a roof in the main roads, and also in the stalls, in the first working, but so soon as these had advanced to their destination the workmen immediately commenced cutting away the pillars of coal that were left, and taking down this coal. The brittle roof followed in some instances so quickly that the coal could not be got out, and being highly charged with inflammable gas, accumulations took place in the cavities so formed, which were with difficulty, if at all, removed by ventilation. Upon all the coal that could be safely worked being removed the entrances into them were built up, and they became unventilated gobs. The workings yielded gas, but not so much as some of the pits in South Wales, but the ventilation was much impeded by the brittle nature of the roof, causing frequent falls, which contracted the air-courses, unless regularly looked after.

The arrangements for ventilation were as follows:—The air descended the shaft through which the coal were drawn, and was at once conducted down the slope in its full stream to the first east level, where 3000 cubic feet was sent; the remainder went down to the fourth east and third west levels: 15,000 cubic feet per minute passing west, and 19,000 eastward, each current being guided along the horse-roads and round the faces by the usual contrivances of doors and stoppings, both currents joining near the top of the slope, and proceeding to the upcast shaft. The east current was about 3 miles long, the west current barely 1 mile. There were six sets of doors in the various levels; the cross-headings for the most part had double doors, and in almost every stall was a framed door, and between every double door a canvas sheet. In most instances boys went with the hauliers to open the doors, in other instances regular trappers were stationed; thus they did not depend upon self-closing doors. The sectional area of the slope was 59 square feet, and that of the main levels and cross-headings 42 square feet, and the current passed through them at 8 to 12 feet per second.

The ventilating current was produced by a Strutt's patent ventilating machine. It consists of two aerometers, resembling gasometers of a gas-works, working in an annular water space, covered in on the top, and fitted with valves for double action, the suction end being connected with a closed tunnel from the upcast shaft, and the outlet discharging into the atmosphere. When the aerometer ascends air is drawn from the pit, on its descent the air is expelled, and at the same time a fresh supply is taken in on the upper side. The two aerometers were each 15 ft. diameter, with a 6-ft. stroke, were driven eight strokes a minute by a high-pressure steam-engine, 18-in. cylinder, 3-ft. stroke, the crank making four revolutions for one complete stroke of each walking beam of the aerometer. The pressure on the boiler was 40 lbs. on the square inch. By calculation, the quantity discharged should have been 48,858 cubic feet, but it was never more than 42,000 feet, the average pressure, or drag, being about 1 6-10 inches of water, or 8 lbs. per square foot.

Naked lights were allowed down the slope, but in all other parts of the workings nothing but locked lamps were admitted, which were supplied by the proprietors gratis.

The management of the operations were intrusted to the following set of officers:—First, the manager, who did not go underground, nor does he appear to have had any knowledge of underground operations. Next, Mr. Harrison, the under-viewer, who had full control for the time being of the underground operations: he descended the pit daily. He had under him an overman, who, again, had under his command firemen, whose duty it was to inspect and give out the Davy lamps to the workmen, to see to the regular circulation of the air, and to inspect the working faces, both before the men entered and during the progress of the work; and, taking everything into account, the discipline was very good, and with every desire on the part of the inquest to investigate it thoroughly, nothing very irregular was noted.

On the morning of December 1 last 200 men and boys descended the pit, between 5 and 8 o'clock. William Derrick, one of the firemen, who had been taken down the pit during the previous night, and who had examined all the workings with a Davy lamp previous to leaving, about half-past four o'clock, intimated this to the day firemen, who immediately descended, and proceeded to examine and give out the lamps to the workmen, who were waiting to proceed to their work. After all the workmen had been supplied, the fireman (Bray) went into the workings and examined them generally in the east side. Edward English examined the west side; he was killed by the explosion. He went into the first east level, and into the stalls in Nos. 11 and 12 cross-headings: there was nothing there to alarm him, but just when he was at No. 12 cross-heading the explosion took place. On coming to the treble doors, they were all broken in pieces. He then went down No. 2 heading into No. 3 cross-heading for a fall. He got on the top of it, and gave the men a light, and assisted in getting the bodies out. A collier, named Moses Short, on the morning of the explosion was at work at No. 1 dip heading, east level, felt a rush of wind, a ringing in his ears, and knew that an explosion had taken place; he instantly took his lamp, and with his son, a boy about 14 years old, made his way out of the pit by the main level, and went about 700 yards before he met the after-damp. He afterwards made his way out on his hands and knees, for he had not strength to walk. James Sims, another collier, was at work in the first east level; he remained at work till a quarter or half-past nine, when he knew by a change of wind, which almost extinguished his light, and a ringing in his ears, that an explosion had taken place. With seven other men, he snatched up his clothes, and made his way to the pit bottom and escaped, as did all his companions.

Thomas Bryan, a collier, said he was working in the east side when the explosion took

place. While working, his father said the fire had gone off, and he himself felt the wind and heard a ringing in his ears. His father's light was still burning, although the explosion had extinguished his. They went back as far as the turn-out, and then turned back to No. 10 heading, hoping to get out that way, but his father could get no further on account of the choke-damp. They both laid down together, and he felt like going to sleep, till fresh wind came, when he came a little to himself. His father meanwhile rolled himself down to No. 8. When the fresh wind came witness crawled about as well as he could; his father was afterwards found dead. The engine-keeper of the ventilating machine stated that he happened fortunately to be at the handle of the engine at the time, when all at once the machine went away with increased rapidity, shaking violently. He checked the engine at once, by shutting off the steam, and in a very short time it went on as usual, and continued without intermission for a fortnight after the accident, when it was stopped for a few hours to make some repairs to the engine. No part of the machine had sustained any injury.

Immediately on the explosion being made known parties went down the pit, to ascertain the state of affairs. It was found that 200 persons who had descended the pit that morning 134 were missing. Ultimately it was found that 64 of these were killed by falls and by being burnt, and 70 by the after-damp. Mr. Harrison was among the first to descend; he found the west side separation-doors and east side separation-doors all right; he then went to the slope. The separation-doors at the first west were all right; he then went into the second east, and found his son, who was burnt, as well as some other parties there. On going into the second west he found the two doors gone; put a sheet up, which sent the air further down, and afterwards went to the third west, where he tried to get over the big fall but could not, there being no roof; he returned, and tried to get into the fourth east, but could not for falls. When the ventilation was in some measure restored, it was found that heavy falls of stone had taken place, so that, although relays of men were sent in every six hours, the last body was not recovered before Feb. 5, nine weeks after the explosion. Traces of fire were found in the pillar workings of No. 3 heading of No. 4 east level, and large quantities of gas had issued, and continued to issue, from the roof in that quarter. There was also the appearance of an explosion of gas in No. 2 cross-heading, No. 3 west level; the timbers standing were charred to some depth. About 30 Davy lamps were missing; several were found unlocked, although in good working condition; but one was found near to No. 3 cross-heading, No. 4 east level, with a small hole driven through the gauze.

[To be continued in next week's Mining Journal.]

reason to doubt Mr. Blackwell's conclusions, and this opinion is based upon my own careful examination of the plant, and this magnificent deposit of ore, which I have endeavoured to describe. I have been formerly gratified by an inspection of the gigantic magnetic specular mines of the Island of Elba, Bonne, and Algeria, and iron mines in other parts of the world, but I confess that I have seen nothing, either in our own country or abroad, so finely deposited, and available for all practical and paying purposes, as the iron mines of Seend. The freight of this Seend iron to the iron-works of South Staffordshire is 7s. per ton, and as there is a market for an unlimited quantity there, even at the present low price, no doubt the rural beauties of the little village of Seend will soon be deteriorated by the smoke which must ascend in large quantities from more extended works, which will be immediately required to develop this splendid property.

The works were erected under the superintendence of Mr. Frederick Vernon Smith, the present manager, a brother of Mr. Josiah Smith, well known in the North as the builder of Schneider, Hannay, and Co.'s works, at Barrow, and I am bound to say the construction of these works do the Seend manager credit.—Wolverhampton. SAM. GRIFFITHS.

## CERTIFICATES TO UNDERGROUND MANAGERS OF COAL MINES.

SIR.—A few weeks ago a leading article in the *Colliery Guardian* referred to this subject, in connexion with my name, and called upon me either to substantiate or retract what I had said in a lecture on "Explosions of Fire-damp in Coal Mine" (as published in the *Mining Journal* of March 16), by way of advocating the establishment of some effective means of examinations for men seeking appointments as underground managers of collieries. I confess that I was not a little surprised by an intimation in that article, to the effect that this examination scheme had not met with the approbation of the parties most interested in it; and this surprise arose out of a previous conviction that a very large portion of colliery managers themselves were sensible of the necessity there exists for some well organised means of preventing men taking upon themselves the weighty responsibilities of colliery management, without possessing either the necessary practical tact or the ordinary amount of knowledge required for directing the underground work with economy and safety. To substantiate what I have already said as to the importance of this matter, both in a utilitarian and humane point of view, I only need refer to a great many instances of most barbarous management of coal mines, as regards the sanitary and safe condition of the working places, which have come under my own eye. I have had, during the last eight years, rather uncommon facility for observing the very culpable carelessness there is manifested by many colliery owners as to the most important qualifications of their managers for conducting the operations in the mine with safety, and of the consequent want of fitness of their overmen for the work assigned to them by the arrangement of the manager. In many cases instead of men being selected from the staff of workmen to fill the places of overmen, firemen, or other places of trust, because of their superior intelligence or practical ability, favouritism here, as elsewhere, commences a work of mischief and injustice, which may end in terrible death to scores, and the overturning of happiness and prosperity to many more. I could not be expected to particularise any case of colliery mismanagement simply for the purpose of strengthening the force of anything I may say in a letter on this subject, but I know that I only need appeal to the remembrance of anyone who may have visited a large number of coal mines in various parts of the country in support of what I have stated. If I thought that these examinations of managers and overmen were not likely to prove highly beneficial to both owners, managers, and workmen, I should most willingly and at once retract in everything that I have said in their favour. I do not advocate the institution of such examinations from a feeling of fear that Mining Schools may after all turn out a failure, for I have no such fear, but I certainly am actuated by an assurance that examinations of this class will be a means of inducing and urging miners to seek after the knowledge specially adapted to their requirements, and surely no one will find fault with such an aim as this, nor will anyone be prepared to deny that a proper qualification for the right discharge of the duties involved in underground management of coal mines is what should be imperatively required of a man before he is allowed to receive the appointment of responsible manager. I am no mere theorist; indeed, to me the abominable nonsense of what is so frequently advanced by letter writers about *theory and practice* is perfectly intolerable. I say that a man's practical acquaintance with the direction and efficient supervision of colliery operations is a qualification indispensable to his fitness for the safe and economic management of the mine; but then, this is not enough. Such a man should be ignorant of nothing which in his day is known to be conducive to the health and safety of the coal miner, and to the prosperity of the enterprising coalowner. Now, I am most thoroughly convinced that this examination scheme would be a much more effectual means of saving human life, and of improving the value of coal mining property, than anything that has yet been done towards the accomplishment of such a purpose. I am aware that anything in the shape of Government interference in matters of private enterprise is to be deprecated, as likely to injure very materially the progress and useful development of the particular department of art or manufacture in connection with which such interference is made; and I am also perfectly aware that there are a very large number of cases needing no such interference as this letter calls for, but I am also aware that a very large number of cases would be very highly benefited by it, and it is more than probable it would be a means of saving many a man from an untimely grave, and many a family from painful bereavement, and misery. If I could but throw the sincerity of my advocacy of such a matter into these symbols or mediums of thought through the power of the pen, and cause them to live before the eye of every interested reader, it would be my greatest pleasure so to do. The subject, however, is nothing new; I, myself, wrote about it to the *Mining Journal* more than three years ago, and I am informed that it was much discussed 10 or 11 years ago, or just about the time when the recently-expired Act for the regulation and inspection of mines was being brought forward. What I have before said I repeat—that I shall at once cease to advocate such a measure when I am convinced that it is not calculated to benefit all the parties concerned. I should be the last of all in saying or doing anything which I feel to be prejudicial to the interests of the coal mining community.

MARK FRYAR.

## VENTILATION OF MINES.

SIR.—The letter from Mr. H. W. Reveley, in last week's *Journal*, is worth some remarks in reply, to show the inconsistencies and strange notions of non-practical men. After some singular preliminary statements, the writer says that "the miner's safety-lamp has signally failed to prevent the recurrence of explosions." This I unhesitatingly deny; on the contrary, there are few mining engineers of any experience, and who have used the Davy or Stephenson, but can tell of cases in their own experience where it has prevented dangerous explosions. What does Mr. Reveley think of the occurrence at Ince Hall some months ago, or at Barnsley, or at —? But it is needless to multiply instances which are well known; and whatever may be the idea of imaginative outsiders, practical men do not hesitate to use it, and to place it in the hands of thousands of workmen as their best friend. Again, he goes on to say that "the only result of its use as a working light has been that of enabling the miner to work in an atmosphere highly injurious to the human frame." Now, is it not a well-known fact that fire-damp in the atmosphere of mines exercises no prejudicial effect on the health of the miner when in a proportion so large that the Davy would actually be melted by continuing to burn in it for a time; and the Stephenson is so constructed that only a small proportion of fire-damp mixed with the air at once extinguishes it? Why, then, these sweeping denunciations? Again, "the Davy must be entirely discontinued." Mark the absolute "must!" And for what reason? Because damage to a lamp is a "certain cause of death" in fiery mines. And so because we are exposed to great risk in dealing with our "intangible enemy" we must abandon our only safeguard.

Well, proceed:—"Rules and regulations never did, nor ever will, prevent accidents in mines." Now, does any one for a moment suppose that a few hundred workmen can be placed in a position of danger and peril, and conduct themselves without rules and regulations, and yet avoid injuring themselves and each other. If there were no rules for the engineers, how many cases of over-winding should we see in a year? If the firemen worked without system, how many explosions? But Mr. Reveley goes on to say, "that the miner must be allowed to work in his own way;" and that "this great object is only to be attained by sinking upcast shafts, or large bore-holes, in such situations as to cut the highest level underground, at which point all the foul air and hydrogen would naturally accumulate. The upcast current, if sufficiently powerful, will cause the fresh air to flow down the downcast shaft." And so, as our miners cannot by means of ample and roomy shafts, and furnace power almost unlimited, produce a state of ventilation comparatively safe, must, at the dictation of this Solon, at once reject these relics of the "beggarly origin" of collieries, and hasten to substitute "large bore-holes," and so obtain a current which, if sufficiently powerful, will actually cause the air to descend the downcast shaft. The current, we are next told, may be accelerated by furnaces, fans, or other mechanical contrivances. Very few potters, horse drivers, or wagon lads in England are there who could not have also given us this useful information. The furnace, too, must be in duplicate, and on the surface. What becomes of the heated column when the furnace is placed on the surface? Why, although you may thus produce a sluggish, feeble current with a very disproportionate expenditure of fuel, the result is so unsatisfactory that but few places in the present day are to be found where such a relic of its "beggarly origin" sticks to a colliery. Our writer informs us very candidly that his proposal is not a new one, and says the expense of its adoption has been urged against it. "But," says he, "this argument is worthless, as the produce of the miner's labour is thereby rendered more valuable." If that value is reckoned by

what it costs, I grant our learned friend is quite right; for certainly if a small field of coal has to be won, and on the present system a couple of shafts, at a cost of 12,000*l.* to 18,000*l.*, would suffice, to increase such shafts in a four or fivefold degree would certainly increase the cost of working that little plot of coal. What a delightfully weighed argument; how nicely balanced in all its parts!

Our friend grandiloquently proceeds to state that he entirely sets aside the consideration of the cost of maintaining thousands of widows and orphans, which falls on the public. So, so; can it be possible that Mr. Revesley fears or imagines that, as one of the public, he pays in the shape of maintaining widows and orphans, the victims of those terrible ogres—the colliery proprietors? In what way are the public called on to contribute to the support of these poor sufferers? Voluntarily, and in no other manner. But on what reason can he say that "though colliery owners may derive princely revenues from their mines, they never take that charge (the maintenance of the widows and orphans) upon themselves?" Only those who have lived in colliery districts can know the great responsibilities which, in the event of fatal accidents occurring, devolve on those princely owners, and how well, in most cases, they fulfil them. "They never provide;" don't they. Let the noble conduct of Mr. N. Wood and partners, in the case of the Hetton explosion, give the answer to that calumny. After such a climax, why is allusion made to the misery of the collier's life? Don't I know hundreds—aye, thousands—of them myself; and are they, not as honest a set of good-hearted fellows as ever walked; eating, drinking, sleeping, and playing in the very fairest enjoyment of animal spirits, and not one in a hundred would ever think of changing his employment.

Now, Sir, in concluding this rather lengthy letter, let me remark that although discussion is a good thing for increasing information on any subject, yet from the hair-brained schemers put forward from time to time by dreaming schemers no more good can possibly accrue to miners than would from a scheme to light the mines by the "lockmaker's bottled lightning." Far be it from me to attempt to throw cold water on any hint likely to be of the least use in lessening danger to the miners; but when we find schemes put forward to force over so many atmospheric pressure into what these schemers are very fond of calling the "various ramifications" of mine; to force high-pressure air in pipes into every working place; to lay gas-pipes to collect the gas, by causing exhaustion in the pipes, and so sucking the gas, but without disturbing the air, into the said pipes; for carrying down cartloads, barrows, hundreds of tons of chemicals to decompose the gases; to light the mines in every working place with gas from the surface; to bore holes from the surface into the goaves and wastes, to let the gas ascend; and the thousand and one panaces for accidents continually put forward by the sympathy-with-the-colliers-mongers, and every one of whom must fire his petty pop-gun of abuse at those Pharaohs of iniquity—the colliery owners, it makes one's blood boil.

April 22.

A LANCASHIRE LAD.

#### DUTY OF SCOTCH PUMPING-ENGINES.

SIR.—With reference to Mr. Forrester's remarks, in last week's Journal, I beg to make the following statement:

The object I had in view was to test the performance of our Scotch-made pumping-engines with those made in Cornwall, and working in Scotland with our Scotch coals. Without entering into the details of the construction, in order to account for the difference, I merely ascertained the quantity of water lifted 1 foot high by the consumption of a given amount of coal, which I presume (being all Scotch) will not differ much in quality, if any. I give four examples, and the results.

No. 1 is a three-valved beam-engine, made in Cornwall, from designs by Hocking and Loam, of Cornwall, both engine and pitwork fitted up by Cornish engineers, and worked for at least three years by Cornish engineers. The cylinder is 60 in. diameter; stroke, 10 ft.; speed of water, 30 ft. per minute; works one 15-inch plunger 18 4-6 fathoms; one 13-inch plunger 39 4-6 fms.; and one 11-in. bucket 18 5-6 fms.; it is the property of Sir George Sutte, of Preston Grange, and has been working at Dolphington Pit, eight miles east from Edinburgh, constantly for the last 13 years. The cost for boiler repairs during that period has only been 7*l.*

No. 2 is a direct-acting engine, with air-pump and condenser; the pump-rods are attached to the piston-rod; it was designed and constructed by Mr. Andrew Barclay, engineer, Kilmarnock. The cylinder is 80 inches diameter; stroke, 12 ft.; speed of water, 66 ft. per minute; and works one 27-in. plunger 41 fms.; one 27-in. ditto, 41 fms.; it is the property of the Coltness Iron Company, and has been working for the last three years at Crofthead Ironstone Pit, 20 miles south-east from Edinburgh.

No. 3 is a three-valved condensing beam-engine, by Jas. Aitken and Co., Glasgow. Cylinder, 60 inches; length of stroke, 8 ft.; speed of water, 44 ft. per minute; it works one 18-in. plunger 30 fms.; one 16-in. bucket 25 fms.; one ditto, 25 fms.; it is the property of Messrs. Merry and Cunningham, and has been working for two or three years at Stevenson Colliery, Ayrshire.

No. 4 is a direct-acting high-pressure engine, with condenser, but no air-pump; it was made by James Aitken and Co., Glasgow, from designs of Mr. David Landale, M.E., Edinburgh. The cylinder is 65 in. diameter; length of stroke, 12 feet; speed of water, 45 feet per minute; it works one 16½ inch plunger 50 fms.; one 16-in. ditto, 41 fms.; and one 16-in. bucket 30 fms.; it is the property of Messrs. Kidston, and has been working at Newton Colliery, near Glasgow, for about two years.

The duty of these engines is—  
No. 1 (Cornish) lifted 50 millions of pounds of water 1 ft. high, by the  
No. 2 (Barclay) lifted 18½ millions.  
No. 3 (Aitken) lifted 15 millions.  
No. 4 (Lendale) lifted 13½ millions.  
St. Vincent-place, Glasgow.

RALPH MOORE, M.E.

#### DUTY OF THE CORNISH ENGINES.

SIR.—The monthly reports of the duty of the Cornish pumping-engines show that within the last 20 years the average duty has declined more than 25 per cent.—from 65 to 52 millions. As this is a matter which must seriously affect the prosperity of the mining interest, I should be glad if you would permit me to say a few words with reference to it, with the view of drawing the attention of mining adventurers to the loss they are thus annually sustaining, since I am convinced that by a little exertion on their part it might easily be remedied.

The system of registering the number of strokes performed by an engine in a given time, and thence estimating the duty, was first introduced by Watt, and on the expiration of his patent the counters were removed from the engines. In 1812, in consequence of the increased consumption of coal, the counters were replaced on many of the engines, and the system of publishing monthly reports of the duty was introduced by Capt. Lean. The average duty was then about 17 millions, but in consequence of the competition excited among engineers it rose rapidly, until, in 1844, the average duty of 37 engines was reported at 68 millions. Since then, instead of a still further rise, the duty has fallen off to 52 millions, and is still declining. That less interest is felt in the performance of the engines is also shown by the fact that 50 engines were reported in 1841, but only 19 in 1857, and 24 in 1860, and of this latter number we may fairly suppose some to have been retained upon the list merely from habit.

Now, the question is, what are the causes of this retrograde movement, and how is it to be remedied? It is a question of some importance, not only on account of the increased cost of working the engines, but also for the sake of the celebrity which the Cornish engines have justly gained for economy of fuel. The primary cause seems to me to be the carelessness of the adventurers themselves as to the performance of their engines. Formerly, when legitimate mining was less rare than it is at present, when more of our mines were in the hands of men who intended to work them, greater attention was paid to this point, and the duty attained was considered as a proof of the fitness of the engineer. Improved machinery, however, enables the makers to turn out better engines now than they did 20 years ago, and I can see no reason why, with a little care and attention, the duty should not be easily raised to its former standard. Cornwall may justly be considered as the birth-place and home of the steam-engine, and after maintaining its supremacy for more than a century, it certainly seems to me that some effort should be made by mine adventurers and engineers, if not to increase the duty, at least to keep it from declining. In every other branch of engineering great improvements are daily being made, and unless Cornishmen bestir themselves too they will soon be left behind, and the Cornish engine, once famous throughout the world, be considered what Mr. Bourne called it a few years ago, "a remnant of engineering barbarism."

M.

#### AURIFEROUS, &c., DEPOSITS IN THE NORTHERN PARTS OF THE BRAZILS—No. III.

SIR.—Generally, the planes of contact between the respective quartz bands and their enclosing rock are tolerably distinct, the quartz bands, for example, as seen in the face of the cutting, standing forth in bold relief from the other ground, so as to be distinctly traceable even on distant view; but, on a closer examination of detail features, it appears that the minute (laminated) "grain" of the enclosing rock bands is not always parallel to the corresponding parts of the side of the adjoining quartz vein; but that those sides in many instances are rugged and uneven, on account of being composed by a multiplicity of planes of a small area, joined with each other at various angles—flakes and minute outshoots of the laminated minerals frequently penetrating into the quartz at an angle with the general run, though apparently mostly parallel to the corresponding smaller planes; such laminae frequently thinning out into mere scales, whose presence is discovered by the quartz splitting more readily in a direction coinciding with their position. At other times such shoots of laminated mineral (talc, &c.) become highly ferruginous, ultimately changing into ferruginous incrustations connected with nests of gossan, intermixed with minute talcose or micaceous scales. The average direction, however, of all those

shoots, &c., may be said to coincide with the general run of the enclosing rock channel. The gossany planes, or ferruginous incrustations, mostly appear to be more or less radiating from, or converging in, nests or clusters of gossan, &c.; and the gold, where occurring, to stand as it were at right angles with such planes. With respect to the general distribution of the precious metal throughout that rock channel, it is almost needless to state that exceedingly rich portions, such as, for example, the specimens which yielded 1600, 1500, and 1000 ozs., respectively, per ton, do not at all occur in the shape of continuous veins or strings, but are met with only now and then, forming as it were the nuclei of the richer zones. According to assays made of average samples, from which all fragments containing visible specks of gold were carefully excluded, the average yield of the poorer quartz and harder ground generally is 0·825 ozs. of gold per ton. Minute quartz grains, mostly rather transparent, are met with enclosed in the mass of the exceedingly soft and rotten rock with which the above quartz bands are interlaminated; and to the east of the above-described channel, in rock of a harder nature, there are noticed minute tapering stringlets of generally hard quartz, conforming in their direction of length to the general grain of the rock.

On careful consideration of all the phenomena and detail features observed in connection with those auriferous channels of rock, keeping before the mind's eye their general structure and appearance as far as observable over a large area of surface, their composition, and the detail arrangement and minute structure as well as chemical mutual relation of all parts, I am forced to the conclusion that although the substance composing those quartz bands may be considered as being of a contemporaneous origin with that composing the enclosing nearly vertical bands of rocks which deviate only 1° to 2° from the perpendicular, still the quartz veins themselves, as such, and in the shape in which they are found at present, are of more recent origin than the latter, being accumulations, by certain slowly acting agencies, in certain planes, of portions of the siliceous components of the respective rock. On a future more appropriate occasion I shall attempt to explain more fully how certain phenomena in connection with the mineral composition of certain rocks may be made to furnish data of an apparently very reliable nature, by which the relative geological age, or rather the relative degree of development of certain non-fossiliferous rocks, and their associated, more or less commercially valuable, mineral segregations or deposits may be defined with a tolerable degree of certainty. There is every reason to believe that those components of the above-mentioned auriferous bands which now occur as oxides will, at a certain depth, change into sulphides, and that change will, no doubt, be accompanied by a corresponding increase in the hardness of the ground, although at present the latter is exceedingly soft, and even the quartz veins are so cut up by almost open cleavage fissures as to be broken down with great ease. With the exception of pyritous ramifications, there is reason to believe that the commercially profitable portions of the auriferous zone, both in the quartz bands and in the other ground, will not continue to any very great depth, a circumstance, however, which may be fully counteracted by due advantage being taken of the areal extent, the soft nature of the auriferous bands, and of the alluvial deposits.—April 24.

G. J. G.

#### SILVER MINING—THE SILVER VEIN COMPANY.

SIR.—I have already stated that I should not have troubled myself about the proceedings of this company, or have written to you on the subject, had it not been for the recent extraordinary statement of "Chemicus," and another correspondent, maintaining that by the new process ore that contained only 13 ozs. of silver per ton in its normal state, was made to produce 113 ozs. of silver per ton!

We remember what was said, and most obstinately argued, by the promoters of the Britannia and Pottimore Gold Companies—that the gossan was not only rich in gold, as proved by constant assays and experiments, but also that by the new process all the precious metal would be extracted from it. I would recommend the shareholders of this company to procure the *Mining Journal* of June 24, 1854, in which they will find recorded the final issue of the aforementioned discreditable undertakings.

I am willing to believe that the Chairman and the directors of this company think that they have a rich silver mine, and that Mr. Squire will obtain the large results he has promised; but until they are realised by the treatment of tons of ore, and not by mere assays of samples, I would advise them to proceed quietly, and not again publish such statements: as they not only tend to bring ridicule on themselves, but on English enterprise in general. Sometime ago Mr. Squire undertook to make quartz containing 1 oz. of gold per ton to produce 20 ozs. of gold per ton—I hope he will be more successful in making silver than he has been in making gold.

I am glad to learn that Mr. Goold ignores now the "silver augmenting process," and that the directors only intend to extract the amount of silver the gossan may contain in the vein at Lostwithiel. I wish them every success; and I hope the results on the large scale will satisfy the shareholders, and be found equal to the representations made at the meeting by Mr. Goold. I beg leave to make the following extracts from Mr. Goold's own statements, as reported in the *Journal* of March 23—"The ores in their natural state had been proved to contain respectively 12, 19, and 54 ozs. of silver per ton. But when those ores had been operated upon in small quantities by Mr. Squire they produced 50, 104, 115, and 126 ozs. of silver." A similar statement was made some time ago at the London Tavern, when Mr. Squire was operating on gold quartz, from which fabulous returns were anticipated by the credulous public. Mr. Goold said "There could be no question that Mr. Squire had operated upon a large quantity on Wednesday last (March 13), and the probability was that in a few days they would hear that 10 tons had been successfully reduced." Is Mr. Goold prepared to prove the correctness of the foregoing statement, and that 10 tons of gossan, which contained in its natural state 120 ozs., produced by Mr. Squire's process 500 ozs. of silver? At the conclusion of the meeting Mr. Goold further remarked "an important fact"—"the first sample of the ore in its natural state produced but 13 ozs. to the ton," "but when the second sample was shown after Mr. Squire had operated upon it, produced 113½ ozs. of silver to the ton."

I trust Mr. Goold will be kind enough to explain the meaning of the above observations, if they are not intended to represent an increase in the amount of silver, as compared to the assay contents of the ore in the natural state. In whatever state the silver may be in the raw material, sulphide, chloride, oxide, or metallic, a careful assay will produce the total contents—hence the additional product of silver can only be obtained through the medium of an "augmenting process," by means of the oxide of lead employed in testing the samples.

It is now upwards of a month since it was said that 10 tons had been reduced, but we have not heard what were the results. According to the last report, 20 tons had been prepared for treatment; I presume, therefore, nothing on the large scale has been yet attempted. I feel no desire to know the mystery of Mr. Squire's process, or the product of the ore; but as a practical man, acquainted with the business, and who feels an interest, in the welfare of all legitimate English enterprise, I should be glad to find that this company is not a myth, but a bona fide undertaking, be the ultimate result what it may.

Your correspondent refers to what is doing in the "Cordillera," and says that the furnaces there "are built so as to smelt only 1 ton each per day, and they last in good condition only from 12 to 15 days;" and that bulk does not mean 10 or 20 tons. I do not know what "Cordillera" Mr. Goold alludes to, nor yet the furnaces he speaks about, but I am able to inform him that I have lived in the Cordilleras of South America upwards of ten years; developed silver mines, erected silver-reducing works, and reduced therein many thousands tons of silver ores of all classes, and that I frequently sampled and reduced 10 and 20 tons and upwards at a time. I have often reduced about 20 tons of concentrated ore per week. I am well acquainted with the patio amalgamation, barrel amalgamation, smelting, and assaying of silver ores, in America and Europe, hence my surprise at Mr. Goold's statements, not only at the meeting, but also in his letter in last week's *Mining Journal*. It is very evident that your correspondent has been misinformed of what is doing in Mexico and on the Cordillera; but I trust he has much more accurate knowledge of the proceedings at Lostwithiel, to ensure the production of silver at a remunerative rate, than he has of our silver establishments in South America.

If Mr. Goold will favour us with another communication, I hope he will be able to inform your readers what the 20 tons of the prepared ore has produced in silver. In the mean time, I recommend a careful perusal of the *Mining Journal* of June 24, 1854. Probably, Mr. Goold is not acquainted with the proceedings of the Pottimore Company, and how the directors at that time were led to expect as great results as those now anticipated at Lostwithiel from similar kind of assays and experiments.

I am sure Mr. Goold and the shareholders will find the *Mining Journal* from January to June, 1854, very instructive during the progress of their trials at Lostwithiel.

EVAN HOPKINS.

#### NATURAL OXIDE OF SILVER.

SIR.—I read with much pleasure the letter published in last week's *Journal*, signed "Science without Prejudice," and willingly admit that, so far as some of the opinions are concerned, I should be ready to express myself even more strongly than the writer referred to. For example, I contend that the letters on the subject of silver oxides, with which your columns have teemed, have been not only "amusing," but also highly instructive and valuable. I admit, moreover, that "little people will occasionally plunge blindfold into print to keep themselves before the public," but I know also that, judging from the complaints of *savans* themselves, whilst pretenders occasionally annoy really scientific discoverers by their ignorant jeans, there are a great many men who have spent their lives in the study of science, and who have attained a by no means enviable reputation, who are ready to sacrifice time, valuable to them, in order to propagate the truth to the extent of their abilities; not because they wish to keep their names before the public, but because they have learned, and learned to respect, the truisms that "knowledge is an article with which we can afford to be charitable, for however much of it we give away we retain the same amount as ever for ourselves." Your correspondent may rest assured that the true *savans* will ever find a place amongst the most modest; that he will ever be ready to learn, and to admit any error he may entertain upon reasonable proof being given of his error; and that with respect to the whole of the knowledge he possesses (no matter what may have been the labour or expense of attaining it), he will be ready to say—

"Come sit ye down upon this pleasant bank,  
And drink with me of these refreshing streams."

But although I agree with some of your correspondent's opinions, I certainly cannot consent to that unphilosophical classification which would include within the same species the alchemists I have already mentioned and such men as Davy, Faraday, Dumas, Rose, and Berzelius. I agree with Prof. Owen that the brains of all men are so similar as to present a distinct line of demarcation between the lowest man and the highest ape, but to such different degrees may the brain be developed that I could scarcely conceive the man who should maintain that the "order" in the animal kingdom to which we belong is capable of subdivisions into families, genera, and species.

The great error into which "Science without Prejudice" falls is this:—He argues, "As new discoveries were always received with caution, why may not the recent alchemical theories with respect to the production of silver prove correct?" but forgets to enquire into the character of the two classes of discovery, which, if carefully done, will at once remove all erroneous impressions.

The discoveries which were received with suspicion, and afterwards proved to be correct, were of this nature:—A given compound material, consisting of 100 parts, was analysed and the nature of (say) 90 parts was explained; the remaining 10 parts comprising elements unknown to the chemist, were therefore, considered as worthless, and so described. Davy, Rose, Faraday, and all the great chemists who have flourished either in this or other countries, confined their efforts to bringing the science of analysis to such a nicety that every part of the 100 parts should be accounted for: let us examine what others propose.

The discoveries which (and in this I believe the entire scientific world will agree with me) are, and I contend should be, received with suspicion until proved to be correct, are of this nature:—A given compound material, consisting of 100 parts, was analysed to contain in each 100 parts 100 parts of elementary substances, each one of such parts being a well-known element (say, for example, copper, 20 parts; silver, 10 parts; sulphur, 20 parts; water, HO, 10 parts; silica, 20 parts; alumina, 20 parts=100 parts) yet a discovery is declared to have been made by which 20 parts of silver can be obtained from the same compound material. Now, as 100 parts have already been obtained from the 100 parts, whence the true chemist asks, comes the additional 10 parts of silver? It can only result from the transmutation of some other element shown by the analysis; and as the theory of transmutation has been proved most incontrovertibly to be fallacious, I will rely upon the judgment of any rational being, whether chemist or totally ignorant of chemistry, to say whether a discovery claimed upon such grounds can be other than fallacious.

SOPI.

#### SPANISH MINING ENTERPRISE.

SIR.—The letter which appeared in last week's *Journal* on this subject, from my esteemed correspondent, Mr. Evan Hopkins, agrees so exactly with my own views and experience, that I can most cordially endorse every sentiment it contains. It is an old axiom,—"If you are to know people well you must live with them;" and so in reference to mining countries, if a proper knowledge of their resources is to be obtained. I have been a resident in the country, and am, therefore, no stranger to the value of its mineral deposits. There cannot be two opinions as to the practicability of English capitalists reaping a good harvest by engaging in Spanish mining, provided the cautious policy, so sensibly pointed out by Mr. Hopkins, is fully acted upon. And I am decidedly of opinion that both mining and manufacturing operations in Spain will very greatly increase, as it possesses elements of a sound and desirable character for the employment of capital.

As a proof of the immense results to be obtained from successful mining in Spain, I may give one instance, among others, that came under my own observation, where for a considerable period the weekly profits averaged 200*l.* per ton, and when I left the country the concern was still in a prosperous condition. Then as to manufacturing operations, especially as regards the iron trade, I was credibly informed during my residence in the country that so lucrative was this branch of business that in one establishment

## Meetings of Mining Companies.

## PENDEEN CONSOLS MINING COMPANY.

A meeting of adventurers was held at the London Tavern, Bishopsgate, on Thursday, Mr. W. Rawdon in the chair.

Mr. D. COHEN (the secretary) read the notice convening the meeting, and the minutes of the preceding one, which were confirmed. The report and statement of accounts, of which the subjoined is an abstract, were then submitted:

Balance last audit	£1825 15 1
Ores sold, and carriage	1327 0 0
Sandries	29 16 6— £1821 11 7
Mine cost and merchants' bills, Jan. and Feb.	£ 969 10 7
Lords' dues on ores sold	60 18 0
Committee and secretary	21 0 0
Sandries	5 1 8— 1066 10 3

Leaving credit balance £2126 1 4

The profit on the two months' working was 300L 6s. 3d. The only liability was the lords' dues, 234L 8s. 11d., to meet which there are assets amounting to 2360L 10s. 3d., and comprising—cash at bankers (including 700L on deposit), 1095L 12s.; ore bills, 1827L; calls in arrear and sandries, 27L 18s. 3d. The club account amounts to 50L 3s. 3d.

The following report was then read:

April 22.—Since the last general meeting the engine-shaft has been sunk 8 fms.; the lode is 2½ ft. wide, but at present is rather disordered, and not of much value. The 11s. north of shaft, has been driven 5 fms. 4 ft., and 5 fms. of lode taken down, which has yielded 5 tons of ore per fm., worth 20L per fm. The 11s south is driven 4 fms. 4 ft.; no lode taken down. The stops in back of this level, north of shaft, are worth 5L of ore, or 20L per fm. In No. 1 stop, south of shaft, the lode is 3 ft. wide, worth 8L per fathom. The 106 end, south of engine-shaft, driven 3 fms. 2 ft., and a bargain of lode taken down; the lode in this end is 3 ft. wide, composed of quartz, iron, copper, tin, and munde, but not to value. The 106 north has been driven 5 fms. 2 ft., and a bargain of lode taken down, which has yielded 4 tons of ore per fm., worth 16L per fm. The stops in back of this level are worth on an average 12L per fm. In conclusion, we beg to say our stops are yielding their usual quantities of ore, and we think the prospects of this mine have never been better than at the present time.—WILLIAM EDDY, JAMES WARREN.

The CHAIRMAN said that, so far as the report went, they were getting on in a regular way, and their prospects were of a very encouraging character. Since the last meeting they had got down 8 fms., and they were now within 3½ fms. of the next level. There was no deficiency of ore in the mine, and if they went on improving in quality they would have a very valuable property. They had now the draft of the new lease, including the Crown and the Duchy grants, as well as those of Mr. Borlase, and this had only now to be engrossed and signed, and then all would be settled. In the 70 they had only a few fathoms to drive to reach the great Pendeen lode, and as soon as the completion of the lease enabled them to open it, they hoped speedily to attain the lode.

A SHAREHOLDER enquired whether they were east and west lodes?

The CHAIRMAN said that they were. As to the general appearance of the mine, he might remark that they had got so far that he might congratulate the shareholders upon their position. They were not likely to meet with any surprise from any source whatever, and no doubt at the next meeting they would be able to talk about a dividend.

Mr. BURSEY remarked that there were three mines all of a row, and that theirs was in the middle; the other two had been paying dividends for some years, and were likely still to continue; whilst the Pendeen adventurers were just reaching their riches, so that he should estimate the Pendeen to be equal in value to the other two combined. He had always been very sanguine with regard to the prospects of Pendeen—perhaps too sanguine for his own pocket—and had always advised his co-adventurers to hold on; he trusted they were now beginning to see how far he was right, and he would leave them to act for themselves.

Mr. R. MC CALLUM admitted that there had been some little disappointment, but was fully assured that the mine had been one of the most judiciously managed of any with which he had ever been connected.

The report and accounts were then received and adopted; Messrs. W. Rawdon, E. Clifford, W. Birdseye, and R. Hallett, were re-elected the committee of management until the next meeting; and thanks were voted to the Chairman and committee. The meeting then separated.

## EAST WHEAL ALFRED MINING COMPANY.

An ordinary general meeting of proprietors was held at the company's offices, George-yard, Lombard-street, on Tuesday.—Mr. F. R. WILSON in the chair.

Mr. J. WATSON (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The accounts showed—

Balance last audit	£206 8 1
Calls received	633 19 3— £340 7 4
December mine cost	116 9 4
January ditto	132 2 0
February ditto	132 4 10
Balance of Jan., Feb., March, and April bills	173 19 7
Ditto May, June, July, and August bills	110 17 6
Ditto Aug., Sept., Oct., and Dec.	5 10 3
Sundry accounts	3 2 3— 674 5 9

Leaving credit balance £166 1 7

The balance of liabilities over assets was 409L 6s. 3d.

The agents' report was then read, as follows:

April 20.—The engine-shaft is sunk 6 fms. 5 ft. 6 in. below the 25, in which distance the lode has varied from 2½ to 4 ft. in width, composed of a beautiful gossan, prian, and quartz, yielding good work for tin, which we have valued at 10L per fm. During the last 8 or 9 fms. sinking the lode has very considerably improved for copper; it is now from 2½ to 3½ ft. in width of gossan, quartz, prian, and ore—worth for copper 38L per fm., and tin about 6L for length of shaft. There is a great quantity of water flowing from the lode, which necessarily carries away the black or light ore; nevertheless, it is as pretty a lode as any man can wish to see at the depth; and, if we may judge from appearances, we think it is improving; the lode is getting more settled. We calculate by the middle of May to be at the 35; the 25 first 11 fms. of which the lode varied from 1 to 2½ or 3 ft. in width, yielding tiny stuff, valued at from 5L to 7L or 8L per fm., when we met with a small cross-course, since which time the lode has been in the even; it is now small, but which we are expecting will open again shortly; driving by four men, at 4L per fm. The 25 is extended west 14 fms. 1 ft.; the lode having also varied from 1 to 4 ft. in width, composed of prian, gossan, quartz, and tin, worth from 5L to 6L per fm. In the east the lode is 2½ ft. wide, presenting very much the same character it did in the shaft prior to meeting with the ore; hence we are calculating this is going over a run of ore ground; driving by four men, at 8L per fm. We have raised a large pile of tinstuff, which we estimate will yield about 3 tons of tin. We had not time to dress any of the slimes or frame tin (I will wire the quantity and amount sold on Tuesday morning in time for the meeting); but we hope during the next quarter to have 3 tons for sale. We sampled on Tuesday (computed) 9 tons of ore, it being mixed with tin; and the water having carried away a great deal of the black ore, we do not expect it will make a high produce; but as we go down we think this will improve. It will be premature to estimate the quantity of ore we shall raise, but if the shaft continues, and we open two ends, there is no question but that we shall raise a good pile of ore. The number of hands employed are—underground, 20 men; at surface, including engineer, &c., 9 men, 5 boys, and 7 girls; and, in conclusion, we are proud to say, seeing the very pretty lode we have discovered in the shaft, and the 25 east and west (neither of the rich mines in the district having presented a prettier thing at the depth), that our chances of success are, indeed, of a high order; and our only object must be to push the shaft and ends on with the utmost speed.—GEORGE R. ODGERS, WILLIAM BENNETTS.

The CHAIRMAN having moved the adoption of the report and accounts, congratulated the shareholders upon one important fact, which was that, however the value of the shares had fluctuated during the past few days, the numerous agents who had inspected the property on behalf of all kinds of interests had, without a single exception, given an unequivocal opinion that East Grenville was one of the most promising mines in the Bassett district. With regard to the committee having been instructed to obtain a 60-in. cylinder steam-engine, he might, as part of the committee, state that up to the present time they had not met with a suitable engine, but that, in the meantime, a new plunger had been put in, which had had the effect of reducing the number of strokes of the present engine from 13 to 3½ strokes per minute. The committee still contemplated getting another engine, although it was not at present necessary.

Mr. PETER WATSON enquired how it was Capt. Odgers, in the report just read, valued the lode at 30L per fm. for the whole length of the shaft, but had hitherto valued it only at the same amount per fathom?

The CHAIRMAN replied that he had only seen a report from Captain Odgers valuing the lode at 30L per fathom; and although the actual words, "the length of the shaft," had not, perhaps, been previously stated, yet there could be no doubt, from the tenor of the reports, that Capt. Odgers intended to convey that such was the case.

Mr. PETER WATSON had asked that question for the benefit of the shareholders, for in the report which appeared in the *Mining Journal* of Saturday the lode was valued at 30L fm. only.

The CHAIRMAN said that it was quite clear, from the report just read, that Capt. Odgers must have intended to convey that the lode was worth 30L per fathom for the length of the shaft.

Mr. LELEAH here produced a private report, which he suggested should be read for the information of the meeting.

Several shareholders hereupon expressed their opinion that, if one report were read, the whole of the reports should be read.

Mr. J. Y. WATSON, F.G.S., presumed that the report referred to was of too favourable a character to suit some people, and hence the objection to its being read.

Mr. LELEAH said the report was of an exceedingly favourable character, and that it was from an agent whose statements could be implicitly relied upon.

Capt. F. PRYOR said that he was the first time he had had the pleasure of attending a meeting of that company, and upon that occasion he wished to make a few remarks upon the advisability or otherwise of erecting another and a more suitable engine. Now, he had not the least doubt that East Grenville would become a very valuable property, and, therefore, he was strongly of opinion that it should be energetically developed. Regardless of the price of shares, or of "bulls" or "bears," he contended that a suitable engine should be erected forthwith, if for no other reason than that a great saving in the consumption of fuel would be effected. Notwithstanding any opinion that had been expressed to the contrary, he was prepared to prove that the opinion of Capt. Odgers was correct—that the engine was capable of bearing a higher percentage; and to effect that object an engine was absolutely necessary. Seeing that their neighbours, West Bassett and South Frances, never presented such indications at the same depth as were now presented at East Grenville, it was a matter of actual necessity, and at the same time would be the means of effecting a great economy, that a suitable engine should be erected. Another question was, as to the taking away of the lode in the shaft. Now, if they took and took away the lode from the sides, they would find the quality of the ore, instead of going away in the water, would be found in the assay—in fact, he was prepared to prove that the water which had washed the ore in East Grenville during the past week would make a better produce than the ore itself. In a mine like East Grenville, producing black ore, shareholders should not be too desirous of having weekly reports. He was convinced that East Grenville would prove itself to be a very valuable property.

The SECRETARY said that he did not think the low produce of the ore arose so much from the fact of the black oxide being washed away as from the presence of tin in the ore, which destroyed the produce for copper; but as the lode was sunk upon, the tin would wear out, and the copper become of richer quality.

Capt. PRYOR contended that the value of the copper was in no way affected by the tin. He was prepared to prove that the best of the ore was washed away by the water, which had been proved by the assay of the water.

The CHAIRMAN, in answer to Capt. PRYOR's remarks with regard to the present steam-

engine, stated that the consumption of coal was not so great as he appeared to imagine, the engine at present working about three to five strokes per minute. He (the Chairman) had distinctly stated at the commencement of the meeting that the committee were still looking out for a suitable steam-engine, but that at present there was not the slightest necessity for it.

The report having been unanimously received and adopted, the accounts were passed and allowed.

The CHAIRMAN said as the operations of the mine had been seriously interfered with by the number of agents constantly inspecting the mine, the committee thought it very desirable that some particular day should be appointed for the purpose of inspection.

The SECRETARY said it was perfectly impossible to carry on the operations at the min with the present system.

Capt. PRYOR fully concurred in the remarks of the Chairman, for the working of the mine was very much prejudiced—the more especially when the sinking of the shaft was being prosecuted—when the workings were encumbered with six or seven inspectors at one time, as in most cases those agents were not the very largest shareholders. He would also suggest that no inspector should be allowed to go underground without an order from the secretary.

A resolution confining the inspection of the mine to one day in the week, and deciding that no agent should be allowed underground unless provided with an order from the secretary, was then put and carried unanimously. It was also resolved that the agent be required to report upon the mine but once a week, and that the agent should telegraph in the interim any alteration in the mine.

Mr. LELEAH said that he had had the mine inspected by an independent and reliable agent, and his report stated that a finer lode he had never seen, and believed it to be the same as that now in dispute at West Bassett and South Frances. After reading that report, he felt convinced shareholders would think twice before they sold their shares. He recommended those in the room to purchase a few shares instead of "bearing" them; for in taking an opposite course he feared they would be subjected to a recurrence of the evil effects of playings with edged tools.

The SECRETARY then read an application for the restoration of forfeited shares, which application it was resolved could not be entertained.

Mr. POWELL suggested that the forfeited shares should be charitably distributed among the "bears."

A call of 2s. per share having been made, the committee of management were re-elected, appointing Capt. F. PRYOR in the room of Mr. James, resigned.

A vote of thanks to the Chairman was then passed, when the proceedings terminated.

## GREAT WHEAL ALFRED MINING COMPANY.

An ordinary general meeting of proprietors was held at the London Tavern, Bishopsgate-street, on Friday, Dr. A. BEATTIE in the chair.

Mr. D. COHEN (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed.

The accounts showed a balance of liabilities over assets of 2668L 10s. 3d.

The report of the committee was read, as follows:

It will be remembered that at the last meeting the committee thought it very probable that the returns in the then ensuing quarter would be sufficient to meet the costs; a reference, however, to the accounts will show that the sales of ores leave a deficiency of 588L 4s. 2d., which is explained in the following manner:—In the past quarter, especially in the earlier parts of it, very great and unusual quantities of rai fell, so much so that many of the mines in Cornwall suffered most severely from it: in many the workings were partially suspended; in some entirely, being nearly filled by the great influx of water beyond the power of the machinery to take it away: in all there was great inconvenience and extra expense. In this mine, where the pitwork, pumping machinery, &c., are so heavy, the extra quantities of water caused a considerable increase in the consumption of coals and other materials connected with the pumping-engines, say to the amount of 200L. An extra coupling for the iron rods at Field's shaft became necessary, as one of those at work showed symptoms of failure; this cost 72L, and new main rods 34L; together, say, about 300L. The great and rapid decline in the price of tin caused a deficiency of fully 150L on the sales of tinstuff, so that there has thus been a loss of 450L caused by outlay and circumstances beyond control. There is now considerably over 200L worth of tinstuff broken on the mine and paid for in the present quarter's accounts. As there was reason to expect an advance in the price of tin it was judged prudent to delay the sale of this, and the committee are glad to say that the step taken has proved quite correct; there has been an advance in the last day or so of 3L 5s. per ton on black tin or tin ores, which is likely to increase. There being a considerable quantity of old iron and useless stores on the mine, it was thought right to dispose of some, which has realized 34L, and which appears appended to the account on this day. It is hoped that the shareholders will consider this statement satisfactory. For the ensuing quarter it is estimated that from 800 to 900 tons of copper ore will be raised, and an average quantity of tin. The working expenses, it is hoped, will be much less in the summer months. There is good reason to think that the mine will cost next quarter; nevertheless, the committee recommend a call this day of 3s. per share. The prospects of the mine, it will be seen from the agents' report, continue good. There is a rich course of copper ore now in the winze below the 210 level, and which the 220 has not yet reached. The drawing power is still less than is required, so there is some difficulty in keeping the mine clear of stuff. It is not wise, however, materially to diminish the number of men, considering the amount of fixed charges. The committee wish to defer still further the question of any increased winding power. All the machinery, pitwork, &c., is in excellent working order. A new coupling to the iron rods at Field's engine-shaft has recently been put in, and another ordered to be kept in reserve.

The report of the agents (Capts. W. Buglehole, W. Arthur, and J. Delbridge) stated that the reserves were fully equal in value to what they were at the last general meeting—15,000L. Their principal and most important points of operation were—the 220 west, the 210 west, and the 160 cross-cut south. Those levels they would drive with all possible dispatch. They calculated to raise in the coming quarter from 800 to 900 tons of average quality ore.

The CHAIRMAN, in moving the adoption of the reports and accounts, thought, upon the whole, those documents must be considered satisfactory. During the last quarter the committee had paid four months' bills, and the present balance against the mine was 2668L.

The deficiency in the quarter's workings amounted to 588L, but 588L had been realised by the sale of old stores, which reduced the loss upon the quarter's working to 200L. By the report just read, it had been seen that there was tin to the value of about 200L lying at the bank, the cost of raising which had been paid, and included in the account just submitted. The value of that tin, therefore, would more than cover the loss which had been sustained during the past quarter. As he had before said, the merchants' bills for four months had been paid, and the committee considered that a call of 3s. per share would suffice for present circumstances, inasmuch as it would reduce the deficit balance to about 150L.

Mr. JAMES HOLLOW (one of the committee), in answer to questions, stated that they would have to drive in the 220 about 7 or 8 fathoms to get under the rich course of ore now valued at 68L per fathom in the winze below the 210.

That was of the greatest importance, for if that course continued to the 220, and also in the 220, a large and valuable piece of ore ground would be laid open, which would enable them to augment the quantity and quality of the ore sales. He recommended, and in that recommendation he was supported by the committee, that until the point to which he had above adverted had been proved, the expense of providing the mine with additional drawing machinery should not

country, and especially in Leeds, the holders should be represented in the committee.

After some discussion, Mr. Peter Watson, Mr. Upton (on behalf of the country shareholders), and Mr. Steele were appointed the committee of management.

The CHAIRMAN thanked the meeting for the confidence they continued to repose in him. He assured them that so long as he was connected with the affairs of the company every economy, consistent with efficiency, should continue to be exercised. He had every confidence in the mine proving a great success, and he only hoped that at the next meeting some of the encouraging prospects now presented would be realized.

A vote of thanks to the Chairman was then passed, when the proceedings terminated.

#### CROOKHAVEN MINING COMPANY.

A meeting of shareholders was held at the offices of the company, Bridge-street, Blackfriars, on Thursday, at which the solicitor to the company and a large number of shareholders were present, Colonel BUSH in the chair.

The MANAGER having read the notice convening the meeting,

The CHAIRMAN proposed that the report of the directors, which had been sent to all the shareholders, be taken as read. A general discussion upon the report ensued, and numerous questions were put as to the various points in it. General dissatisfaction was expressed that there should have been so many shareholders in arrears of calls, and at the request of the meeting the call-book was produced, in order that the names of defaulters should be known; it was then unanimously resolved that the report be received and adopted.

A full discussion then took place as to the means at the disposal of the company, from which it appeared that the directors had laboured under considerable difficulties from want of more ample funds. Upon the question as to whether the clause in the prospectus which limits the amount of each call to 2s. 6d. per share, and that at intervals of three months, should be repealed, it was decided by the general feeling of the meeting that it should at present remain as it now stands, and that decided steps should be taken to compel defaulting shareholders to pay up back calls, as the payments with the sum to be derived from the sale of the ore (which the manager informed the meeting was already delivered in Swansea) will put the directors in full funds. It was, therefore, proposed by Mr. R. Moss, and seconded by Mr. G. DUNN, and carried unanimously, that all shares upon which any call or calls are in arrear, exclusive of the last made—that of March 4 last, be now forfeited, and that, in addition, the directors instruct the solicitors of the company to take the necessary proceedings for recovering arrears.

Numerous enquiries having been made whether Sir J. Dombrain, or any of the parties issuing the circulars from Dublin were present, the MANAGER laid on the table a circular, which he said had been sent to the board, but which, as each person seemed to have it in their hands, he would not read; he also explained that this meeting had mainly been called for the purpose of allowing the shareholders to question the directors upon the different accusations put forth in Sir James Dombrain's circular. The directors believed they had completely and satisfactorily answered every one of them in the reply they had published. The circular had been in the hands of all for eight days, and although they were not surprised at the conduct of the Dublin directors in abstaining themselves from the meeting, they were certainly disappointed. They (the board) put themselves in the hands of the shareholders, and were prepared to answer any questions in reference to the accusations, or their reply.—Considerable indignation was expressed by the meeting at the conduct of the Irish directors in not attending.

A SHAREHOLDER explained that he had that morning received a circular from Dublin, which was addressed to him, and asserted that he had given his concurrence in the views of the writers of the Dublin circular, which he most certainly had not. He had come up to town expressly, and at some inconvenience, to protest against such a course of action, which was most dishonorable. They had issued a circular containing serious accusations against the board of directors in London. In the heat of the meeting many shareholders had probably, like himself, expressed themselves strongly against such management. This Irish directors had construed into giving them his support. Since then an answer had been given to the accusations, which revealed that the writers of the circulars were themselves the sole cause of the mismanagement; and now, when the time came for them to reply, they were absent: he could not too strongly characterize such conduct. Several other shareholders expressed themselves similarly.

It was then proposed by Mr. PARKIN, seconded by Mr. Moss, that having heard the report and statement of the board of directors as to their management of the mine during the last half-year, resolved.—That it is the opinion of this meeting that the circular issued by the finance committee of Dublin directors is most unwarrantable, and calculated to be mischievous and injurious to the interests of the shareholders; and that the confidence of this meeting in the present board of London directors is unabated; and, furthermore, that it is desirable to put an end immediately to the functions of the Dublin finance committee; and to have such books and papers as belong to the company, and are now in the office in Dublin, transferred to the London office of the company.

The CHAIRMAN having put this motion to the meeting, it was carried unanimously.

The MANAGER informed the meeting that about 70 tons of good copper ore from the mine had just been unloaded at Swansea. He then read the following report:—

**April 22.**—The ground at the engine-shaft is gradually changing for the better, and, from the general appearance of its character, I am fully persuaded we shall be long come in contact with good ore ground; it is now mixed up with quartz, soft carbonate of lime (a new feature here), chloride, and branches of strong yellow ore; the branches dropping in from the south are, no doubt, offshoots from the great champion lode, which is a good indication of its being highly mineralised. The engine-shaft is making a large quantity of water, produced by the change of ground. We shall be prepared to drop the new lift to the 50 the moment it is here, which I expect will be next week; this done, the present expenses will be considerably curtailed. After a good deal of consideration and reflection, I would again suggest that 1000 ft. be expended on sinking a trial shaft 160 fms. west of engine-shaft, on champion lode, where indications of more than ordinary promise are seen; and to extend the 40 cross-cut south to intersect the south lodes, which cannot be many fathoms from the present end. If you consent to carry out those two important objects, I am fully convinced you will never find cause to regret it. In conclusion, I beg to remark that I am more than ever fully convinced that you are in possession of a valuable property, and a short time only is required to develop it.—H. THOMAS.

A vote of thanks was unanimously given to the Chairman for his courteous conduct in the chair, and the meeting came to a close.

**WEST DEVON COPPER MINING COMPANY.**—This well-known sett, formerly worked as Wheal Williams, was re-opened on Saturday. A portion of the mine was opened about 30 years since, and proved so valuable that shares were freely bought up at 120*l.* to 130*l.* each. However, for the want of funds and other causes, the mine was shut up, and since then two or three attempts have been made to work it, but with partial success. The history of the mine, briefly told, is as follows:—Shortly after the prosperity of the Devon Great Consols (an adjoining mine) this piece of ground, now called the West Devon Copper Mine, was sought after by mining speculators, but more especially in the western part of the county. No less than 60 different applications were sent to the Duchy officers, by whom tenders were required. The highest bidders were gentlemen in the neighbourhood of Truro. The mine was worked for a short time, and about 250 or 260 tons of rich ore were returned; but owing to conditions under which the mine was held in dues and rent (in the former 12 per cent., and in the latter 33 per cent.) the mine was abandoned and the materials sold; for had it been a second Devon Great Consols it would have only paid the Prince of Wales, and made no return whatever to the adventurers. A short time after that the mine passed into the hands of a second company, and 14,000*l.* was spent in attempting to work it in too many places, instead of adhering to the principal part of the mine, and when the mining panic took place the operations in West Devon were again brought to a standstill. The machinery was then sold off, and bought by the present company, and the mine is now about to be worked under the Limited Liability Act with a moderate capital, and with some great hopes of success. The whole of the plant has been thoroughly repaired, and especially the most important parts of the engine, which is now equal to any in the county, and where required new works have been supplied by Messrs. Nicholls, Matthews, and Co., engineers, Tavistock. The engine was set to work on Saturday; a more satisfactory result could not have been wished, and the event was commemorated by a dinner upon the ground, after which the most favourable opinions of the prospects of the undertaking were expressed. Among those present were—Mr. W. S. Trotter, secretary to the company (chairman); Messrs. T. Nicholls, B. Oliver, William Matthews, sen., and William Matthews, jun.; Capts. J. and W. Cleme, Cook, and Joseph Richards, Devon Great Consols; Capt. Donnal, Wheal Union; Capt. John Key, West Wheal Maria; Captain Charles Williams, Queen of Tamar; Mr. T. Knight; Messrs. Richards, Bodley, and R. Sarjeant, Wheal Martha; Mr. Simmons, mineral agent of the Duchy of Cornwall, &c. Mr. T. Nicholls (Nicholls, Williams, and Co.), under whose direction the restoration of the machinery has been completed, in proposing success to the mine, remarked that although they had worked that mine without any very great success, their chairman (Mr. Trotter) had had sufficient pluck to come down and try it again; and under the terms in which it was held by him, which, perhaps, nobody would refuse, he hoped the undertaking would prove a successful one, and that Mr. Trotter, and the company who had backed him up, would never have occasion to regret entering upon it. It was generally considered that the ground on which they were sitting would produce hundreds of tons of copper ore, and it had been said that all that was wanted was a fair and proper trial; let them stick to one place, and they would soon see the results. Mr. Nicholls then told Capt. Rowe that the prosperity of the mine greatly depended upon him; it behaved him to see that every penny was economised, and that whilst he should give the men fair and proper wages he should have an eye to the interests of the adventurers. In drinking success to the West Devon, he had to couple with the toast the name of the gentleman who filled the chair, and when he told them that he had brought down a very considerable sum to the county, he felt sure they would all unite with him in wishing him success.—Replying, Mr. Trotter said that when first the mine was introduced to his notice it was under such circumstances that he thought it necessary to have the price asked for it reduced, and when he told them that the sum demanded was 15,000*l.* he said that he bought it for 4000*l.*, to be provided for by paid-up shares, they could not say they were giving too much for it. He hoped and believed, therefore, that it would prove a very good bargain. There was one thing that induced him to take up this mine—it was this, that he believed the reports of such men as Capt. James Richards and others, who frequently told him that it was a most favourable part, and that large quantities of ore had been raised. Therefore, notwithstanding the large sums of money that had been lost by the previous adventures, he was induced to take the matter up, and he believed the time would come when it should be proved that they had not taken up a bad set, but that everything would turn out to the advantage of the present adventurers. Among other tests, the Chairman proposed the health of Capt. George Rowe, the captain of the mine; he believed the company had a valuable officer in Capt. Rowe, who was well acquainted with the property from his previous knowledge of the old workings. Capt. Rowe acknowledged the toast, and said he knew where to open on the back of the lode, which could be done for a very small sum, and he had seen stones of 3 cwt. of solid ore at the engine-shaft. He drew the attention of the company to the fact that this mine was in the valley, and on the opposite hills, east and west, stood the Devon Great Consols and the Great Wheal Martha, two highly successful mines, and it was well known to many men that in such circumstances rich ore was found in the valley. He was certain this sett would prove a most valuable one.—The Chairman proposed the health of Mr. Walter Weeks, proprietor of a sett where he (the Chairman) was now at work—Wheat Concord; and he believed that the adventure now opened upon Mr. Weeks' ground would prove a prosperous one.—Mr. Weeks, in returning thanks, said that from the high opinion entertained of Concord Mine there was little doubt but Mr. Trotter would be also successful in working that mine. Without adventurers, landlords would be poorly off, and he congratulated the county that Mr. Trotter had come among them with capital, and friends who were willing to test such properties as were honestly recommended to them.

**THE SMELTING, REDUCTION, LIME, AND COAL COMPANY.**—This property, covering an area of about 450 acres, part of which is freehold, may now be looked upon as offering a good and safe investment, for the Canal has just been proved in the estate, of a very good quality. The colliery is in vigorous operation, and returning from 1200 to 1500 tons of coal weekly. The registered office is at present at 6, Castle-street, Liverpool, and the capital 80,000*l.*, in 12 shares, 20,000 of which are unallotted. The directors will possibly consider the propriety of merging those shares, or offering them to the shareholders.

#### SALES OF LEAD ORES.

LEAD ORES SOLD FOR THE QUARTER ENDING MARCH, 1861.		
Mines.	Tons.	Amount.
Iale of Man Mining Company	1125	£14,982 5 0
Lisburne	452	8,729 0 0
Wheal Mary Ann	457	6,069 0 9
Westminster	290	5,748 14 6
Cargol	300	3,942 10 0
Laxey	175	3,498 4 10
Dylife	231	3,132 17 0
Cwmystwith	229	3,078 0 0
East Darren	158	2,591 9 0
Rhosesmor	180	2,518 0 0
Wheal Wrey Consols	131	2,008 5 0
Cwm Erffa	117	1,856 13 0
Maesyrwddn	123	1,774 15 6
Vale of Towy	111	1,437 16 0
Goginan	82	1,515 0 0
Wheal Ludcott	75	1,481 17 6
Llanherwyd	91	1,290 17 6
Dyngwym	93	1,271 19 3
Farys	89	1,218 12 6
Kewick	78	1,020 3 0
Mount Pleasant	75	964 17 6
North Minera	70	897 15 0
Cectia Liys	68	838 15 9
Bryn Gwilog (March)	61	825 17 0
Rhoswydol	57	765 7 6
Herward United	60	620 3 0
Dyngwylg	45	614 5 0
Aberdovey	43	592 6 6
Pool Park	45	582 10 0
Deep Level	45	561 0 0
Bryndaf Hall	38	532 9 0
Maesysafn	41	510 16 6
Orsedd	36	502 2 0
Lisbon	40	489 0 0
Nanteos and Penrhiew	33	439 11 0
South Garths	30	438 18 10
North Trelewany	31	404 11 0
Carmarthen United	21½	402 8 4
South Darren	31	400 6 6
Fronissa	27½	378 7 4
Cardiganshire Consols	28	365 8 0
Roman Gravels	24½	335 3 2
Alt-y-Crib	25	333 17 0
Cefn Brwyno	22	326 8 0
Holywell Level	20	291 10 0
Brondyad	20	256 0 0
Bryntail	70	252 0 0
Yerner	19	252 3 6
Speedwell	16	179 1 8
North Exmouth	13	170 2 0
Hendre Ucha	8	109 4 0
Catherine and Jane Consols	8	103 4 0
Grosvenor	8	94 11 3
Dolgoch	7	85 4 6
Craigton	6	85 1 0
Talacre	3	41 15 6
Plasnewydd	3	41 12 6
East Merlin	3	40 5 6
Trellogan	3	39 4 6
Wheal Trelewany		
Wheal Frank Mills		

#### BLENDEN.

North Wheal Exmouth	75	£ 182 10 0
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#### SALES OF BLACK TIN.

BLACK TIN SOLD DURING THE QUARTER ENDING MARCH, 1861.		
Mines.	Tons.	Amount.
Dolecoath	21½	16,043 4 4
Carn Brea	132	8,712 0 0
Charlestown United	75	5,378 11 5
Wendron Consols	73	5,327 6 0
Par Consols	65½	4,719 7 11
St. Day United	68½	4,634 13 7
Great Wheal Vor	52½	3,901 13 9
Pedin-an-drean United	48½	3,621 16 3
Great Wheal Fortune	48½	3,335 17 0
Great Wheal Busy	42	2,760 13 7
Drake Walls (Jan. and Feb.)	31½	2,816 3 0
St. Austell Consols	28½	2,065 0 0
Tincroft (Jan. and Feb.)	29½	1,989 0 6
West Fowey (March and April)	27½	1,916 1 7
Par Consols (March)	25½	1,798 11 9
Wheal Buller	26	1,795 2 11
New Birth Tor and Vitifer	23½	1,758 8 3
Ashburton United (March)	20½	1,526 15 9
South Carn Bras	26	1,418 18 6
Durio	19	1,380 7 0
Wheal Kitty (St. Agnes)	16½	1,160 2 11
North Roskar	17	1,109 17 0
Penhalls	15½	1,105 5 2
Bole Hill	12½	966 2 4
West Fowey Consols	11½	895 2 6
Great Work (Jan.)	14	843 0 6
North Wheal		

doubt that as we progress into the hill the counter lode, as well as No. 2 and 3 lodes, will be found very productive. The number of hands employed in driving the counter lodes is six. In proceeding with the latter it will intersect the other lodes as well.

**DEVON NEW COPPER.**—P. Hawks, April 24: The ground in the engine-shaft below the 68 consists of a very compact clay-slate and spar, with several veins of mudioc passing obliquely through the length of the shaft, and the progress is quite satisfactory. The prospects of the great north lode in the cross-cut in the 68 are very similar as stated in my previous report. The end east in the 68 fm. level is suspended, and the cross-cut into the lode commenced.

**DEVON UNION** (Tavistock).—Capt. Daniel: The lode in the 23 is producing stones of ore of good quality, and likely to lead to considerable improvement. The lode in the bottom level continues to look well, and we are sinking the shaft to get a good back to stop away the ore. The whole appearance of the workings gives indications of the mine being very productive.

**DUCHY PERU.**—J. Morcom, April 24: A 33-in. cylinder engine has been erected within the last few weeks, and a cross-cut is now being driven from the bottom of the shaft to intersect the lode. Carter's shaft has been sunk 19 fm. below the surface, and 4 fm. only from Great Bettallack boundary. At this point they have a course of blende, which will produce 20 tons per fathom. One part of men raised from this bunch over 180 tons in three weeks. In the eastern part of the mine they are raising large quantities of mudioc, productive for silver; also large quantities of low-priced copper ore. I am of opinion when this mine is properly developed that it will prove a lasting and remunerative property to the proprietors. A parcel of blende has been sold within the last few days at 27. 12s. per ton.

**DULTA.**—J. Martyn, April 23: We are driving a cross-cut to cut Dyer's lode with all speed; the ground is of a most promising appearance for tin. I have no doubt but that in another week we shall commence breaking tin from this rich lode, from the backs of which so many tons have been raised and sold. Buttin's lode is much improved in quality and size, being now near 8 ft. wide. We are progressing rapidly, and hope to commence stamping very soon. Our engine is working well.

**EAST GRENVILLE.**—(Telegram), April 25: The lode maintains its size, looking equally as well. The 25 west is 3½ ft. wide, kindly lode.

—*Telegram:* April 26: The lode in the 25 fathom level west is very much improved in appearance.

**EAST GUNNIS LAKE.**—W. G. Gard, April 19: The lode in the 36, now being taken down, is improved; the lode has increased in size, and I hope to report more fully on it on Tuesday. We shall sample about the same quantity and quality as last. On the whole, we are looking very well.

**EAST GUNNIS LAKE AND SOUTH BEDFORD.**—Jas. Phillips, April 26: We have taken down the lode in the 36 east, and find it to be worth 8 tons per fathom. All other parts of the mine are much the same as last reported.

**EAST ROSEWARNE.**—J. James, April 20: The 55 cross-cut is without change to notice; we think the ground will improve as we approach the lode. In the 45 east the lode is 9 in. wide, of some very promising character, composed of mudioc, quartz, and copper ore, producing of the latter 1 ton per fm., worth from 10s. to 12s. per ton; we have intersected a small cross-vein, which has improved the lode. In the 45 west the main part of the lode is 18 in. wide, impregnated with copper ore; there is a branch north of this 6 in. wide, intersecting the lode a little below the level, and worth about 8s. per fm.; this is a promising feature for the level below. In the 33 east the lode is yielding some rich ore, and will open tribute ground. The ground in the 22 cross-cut, north of King's, is moderate for driving. We are cutting down King's shaft with all possible dispatch. The pitches throughout the mine are much as for some weeks past. We calculate to open on April 23 from 85 to 90 tons of good quality ore; this is the produce of eight weeks' working.

**EAST TREFOUSH.**—J. Pope, April 25: I have nothing new to report in the 55 cross-cut, north of Smith's engine-shaft, since my last. In the 55, west of engine-shaft, on Smith's lode, the lode is 18 in. wide, chiefly quartz. In the 34, east-of cross-cut, on Trelewlyn's lode, the lode is not looking quite so well as when last reported, but it still contains stones of copper ore, with a kindly appearance. At Trelewlyn's first road shaft, sinking below the 30 from surface, the lode is 2½ feet wide, producing stones of yellow copper ore.

**EAST TRESKERBY.**—J. Nancarrow, April 22: The engine-shaft is down to the 20, and we commence driving north and south to-day towards lodes on each side of the shaft. The north lode we shall probably reach in six or seven weeks, and from its appearance above, and the character of the strata in which we drive, there is every probability of its being valuable. The flat-rod shaft is sunk 22 fms. through ground which is said that can be desired for the production of ore, and in which the lodes when reached can hardly fail to be good. The engine works well, and has had but little water, consequently our present operations are very inexpensive; the work hitherto done has been preparatory (in clearing the mine, erection of machinery, sinking shaft, &c.), but we shall soon get to work on some of the lodes.

**EAST WHEAL FALMOUTH.**—Wm. Hancock, April 23: The new engine-shaft is 12 fms. 3 ft. 6 in. below the surface. Our progress during the past week has been rather slow, by means of the influx of water; I have suspended the sinking for the present, and put the men to cut out the ground under it, in the adit level, in order to put up a rise against it, when the water will be discharged in the said level. We have about 6 fms. of ground from the bottom of said shaft to the bottom of the adit level, and every effort is being made to push it through so fast as possible, in order to operate upon the lode.

**EAST WHEAL RUSSELL.**—J. Goldsworthy, April 24: The lode in the 100 east, on the north part, is worth from 8s. to 10s. per fm. The winze below the 88, on the north part of the lode, is communicated with the 100, on the north part of it. There is no change to notice in any other bargain since last week.

**EXMOUTH.**—J. P. Nicholls, J. Nicholls, April 24: The lode in the 72 north is harder, and not quite so productive as when last reported on; it will now yield about 1½ ton of lead ore per fm. The stopes in back of this level is yielding about 1½ ton of lead ore per fm. The rise in back of the 69 north is communicated with the winze in bottom of the 40; we have now good ventilation at these points, and shall extend the 80 and 60 north without delay. All other parts of the mine are without change to notice since last report.

**FOWEY PAR AND PAR UNITED.**—J. Tredinnick, April 22: I have suspended driving east on Palmer's lode, and put the men to drive east on one of the lodes cut in the cross-cut, which is from 1½ to 2 feet wide, and looking very promising; the ground in the cross-cut is getting more easy for driving. The men are getting on very well in taking out the foundation, which I hope will be completed this week. I sold 9 cwt.s. 0 qr. 31 lbs. of tin, at Charlestown, on Thursday, at 69s. per ton.

**FOWEY CONSOLS.**—F. Puckey, S. Sampson, W. Opie, April 22: Tratharn's Lode: In the 270, east of Bottrell's shaft, the lode is 2 feet wide, and will yield 1 ton of ore per fm. In the 240 east the lode is 1 ft. wide, but still poor.—Bottrell's Lode: The lode in the rise in the back of the 240 east is 2½ ft. wide, and will yield 2½ tons of ore per fm., worth 8s. per ton. The lode in the winze sinking below the 230 is 4 ft. wide, and will yield 4 tons of ore per fm., worth 8s. per fm.—Hewett's Lode: In the 220, west of Union shaft, the lode is 1 ft. wide, producing saving work. In the 200 west the lode is 1 foot wide, and will yield 1 ton of ore per fm. In the 180 west the lode is 1 ft. wide, and will yield 1 ton of ore per fm.; the lode in the winze sinking below this level is 1½ ft. wide, producing saving work, but not sufficient to value. In the 170 west the lode is 2 ft. wide, and will yield 1½ ton of ore per fm.—Footway Lode: In the 140 east, west of Bay's shaft, the lode is 2 feet wide, and will yield 1 ton of ore per fm.—Raashield's Lode: In the 60 west, north of Cock's shaft, the lode is 3 ft. wide, containing good stones of black, grey, and yellow copper ore. The lode in the rise in back of the adit level is 2 ft. wide, and will yield 1 ton of ore per fm. In the 60 east, north of Pedler's shaft, we have intersected a cross-course, which has disordered the lode for the present. The other bargains are much the same as last reported.

**FRANKE MILLS.**—J. P. Nicholls, J. Cornish, April 24: The ground in the 84 north has become better since our last report for driving, but it is not yet rich for ore, still we are daily expecting an improvement from the character of the end. We are cross-cutting both east and west at the 72 north, but up to this we have not intersected anything to value. The winze sinking below, or in the bottom of this level, slightly fell off in value after our last report, but is now improving again. The 60 north, on the west side, presents a very promising appearance, and is at present yielding some very rich quality lead ore, with every chance of further improvement. We are driving the 60, north and south, on the east side, from the north cross-cut; it yields a small quantity of lead ore, but not enough to value. The 60 north, on No. 1 branch, is without any particular change since we commenced it. The stopes in the back of the 60 and 45 are looking well, and yielding about their usual quantity of ore. We are making all possible dispatch with our wide stall in the back of the 45. There is no alteration in any other part of the mine worthy of remark. We purpose to sample on Friday next 175 tons of silver lead ore.

**GAWTON.**—G. Rowe, April 20: The lode in the stope in back of the 50 west is 5 ft. wide, and will produce 2 tons of ore per fm. The stope in bottom of 36 is worth 2½ tons of ore per fm. The lode in the 26 west is 4 ft. wide, composed principally of spar, a little flockan, mundic, and good stones of ore. The stope in back of the 24 west is worth 2 tons of ore per fm.

**GONAMENA.**—R. Pascoe, W. George, Jun., April 24: The lode in the 90, east of the cross-course, is 18 in. wide, worth for copper and tin 8s. per fm. In the 90 west the lode is 1 ft. wide, containing some good spots of copper ore. We have set a stope in the back of this level, which is worth for tin 10s. per fm. In the 80 east the lode is 6 in. wide, unproductive. In the 70 east the lode is 1 ft. wide, of a very promising appearance, and still letting out a quantity of water. We have also set a stope in the back of this level, which is worth for tin 10s. per fm. In the 80 east the lode is 6 in. wide, unproductive. In the 70 east the lode is 1 ft. wide, of a very promising appearance, and still letting out a quantity of water. We have this week commenced a cross-cut at the 68 to intersect some of our south lodes, where the ground being very favourable for driving, we hope good progress will be made. We have got our additional 12 heads of stamp to work, which are doing very well.

**GREAT BRIGAN.**—Thos. Trelease, April 23: In the deep adit level, driving east of Trevemming's shaft, on North Treskerby lode, the lode is about 2 ft. wide, producing good stones of yellow copper ore, with promising appearances; this lode, driving west of said shaft, is 3 ft. wide, composed of capel, spar, and mundic, containing spots of ore. We are driving a cross-cut, south of Gata's shaft, on the cross-course, and hope to intersect this lode in about two months. In clearing the shallow adit level west from adit shaft, about 40 fathoms from the east boundary, the lode varies from 1 to 3 ft. wide, composed of capel, quartz, and prian, containing some black oxide and yellow copper ore; this looks very encouraging, with every prospect of proving productive in depth. We are sinking a trial shaft on this lode 10 fathoms west of the eastern boundary; this shaft is sunk 3 fms. below the surface; the lode is from 2 to 3 ft. wide, chiefly gossan, with good specimens of copper ore, but not enough as yet to value; this looks promising for meeting with a bunch of ore near the surface. We are engaged in putting up a house-whim at a shaft on the middle lode, for the purpose of clearing the shaft on the old men's workings on this lode at the deep adit level, likewise opening a shallow level behind the balance-bob pit, for the purpose of putting dial-rods on Gata's shaft. The engine and pitwork are now complete as deep as the adit level. The masons are engaged in building boiler-house walls, which will be finished this week.

**GREAT CARADON.**—F. C. Harper, April 25: We have just intersected a lode in the south cross-cut; so far as I can yet see it is about 6 inches wide, underlying north about 2 feet 6 inches per fathom, and letting down a quantity of water; it is composed of quartz, peach, mundic, prian, and spots of copper ore. As soon as I have satisfied myself that we are through it I propose driving west on its course a few fathoms. The north cross-cut is also letting down a large stream of water, and the ground is much mixed with mundic. —P.S. The air is getting bad in these ends. I shall be under the necessity of ordering some pipes to fix in them shortly.

**GREAT RETALLACK.**—W. H. Reynolds, April 20: The lode in the 35 is opened on 3 fms. east and 4 fms. west of cross-cut, and in one place for 6 fms. wide, in addition to several fathoms of cross-cut through capels before reaching the productive part. No south wall is yet met with, so that the lode is still very large; it is more compact than at the 30, and the blende cannot be broken so fast, but it contains much more quartz, in some of which we find good crystals of lead. We notice this because no lead has been found in this lode above the 30, and as it is evidently changing its character in depth, we think the presence of lead even in small quantities a good indication. The lead is

rich in silver, and as we hope to commence sinking Stephen's shaft below the 35, and on the course of the lode in three or four days, we may soon make a good discovery. The change from iron to blende at the 18 was sudden, and the change to some other mineral may be equally so. In the 30 east we are 14 fms. from the boundary, and have got into a mass of flockan and gossan, similar to that we had previous to getting the bunch of blende driven through at this level. The carriers will begin to carry to Truro on Monday, and will carry about 40 tons per day, so that by Wednesday fortnight we shall sample 500 tons of blende.

**GREAT SOUTH TOLGOE.**—J. Daw, April 24: The lode in the 112, west of Lyte's shaft, is 2 ft. wide, producing some good stones of copper ore. The lode in the rise in back of the 100 west is 2½ ft. wide, producing 2 tons of ore per fathom. In the winze sinking below the 90 west the lode is 1 ft. wide, producing some very good ore. In the 40 west the lode is 2 ft. wide, producing 1 ton of ore per fathom.—P.S. We have sampled to 90 tons of copper ore.

**GREAT WEST SETON.**—H. Cowling, April 24: I have suspended the clearing of the adit level for a time, until I get a small chain to place on the tackle, instead of the rope, the shaft being sunk on the underlie of the lode, the rope continually rubbing against the ground, it wears out fast. The men have been employed since in clearing out the stuff from one of the sinks in bottom of the adit level, put down by the old workers. We have cleared up one of these, which is about 8 fms. to the west of the engine-shaft, the bottom of this is not more than 6 fms. deep from the surface. I must say that I was quite surprised to see such a fine lode, 3 ft. wide, well-defined, and composed of gossan, soft spar, and mundic. We broke out large rocks of this from the lode, and I am delighted to see many small rughes in these rocks, containing calcareous quartz, which is a good indication of copper ore. I fully believe that if the water be drawn out to the bottom of the shaft, which is 13 fms. below the adit level, and a level driven in under these sinks, we shall meet with a good lode, nothing inferior to the adjoining mine, the West Wheel Seton. What can be more probable? We have three other lodes discovered in the adit level north of the main lode; these three underlie south, and the main lode north. One of these lodes will fall into the main lode only a few fathoms below the adit level, and the others in rotation. The component parts of these lodes are all that can be expected to be seen in rich lodes at deeper levels, being quartz, peach, prian, and mundic, with green oxide of copper. There is another sink further west, on the main lode, which appears to be put down deeper. I intend to clear this out next week. I am surprised to see such indications in such very fine lodes in this district left so long unexplored. I assure you that nothing can be more satisfactory than your prospects in opening up this mine. I have had an interview with the old men who worked at the shaft the last working; they tell me that they cut into the lode in the bottom fully 5 ft., and did not reach the south wall of it; that it was composed entirely of soft spar and yellow copper ore. Any person can see the position of the sett by referring to Mr. Tredinnick's map. The Great West Seton takes in all of the principal lodes of the West Wheel Seton.

**GREAT WHEAL BADDERN.**—T. Hampton, April 22: The character of the ground in the shaft is changed for the better, and there is more lead, specimens of which will be sent you. In the bottom of the shaft we have met with a floor dipping the reverse way of the ground hitherto, but what the result of this will be we cannot say until the shaft is sunk deeper; this floor is dipping like the eavan, and it may be a bed of killas in itself; it is however more healthy, which the specimens will show.

**GREAT WHEAL BUSY UNITED.**—J. Delbridge, J. Bryant, April 19: In the engine-shaft we have no change to notice. In the 130 rise there is no change. At Offord's shaft the lode is less productive. In the 110 cross-cut north the ground is favourable; no appearance of any lode as yet. In the 100, at Offord's winze, the lode is 20 ft. wide, worth 3 tons per fm. In the 100 end the stope is worth 10 tons per fm. At Vivian's winze the 100 is worth 8 tons per fm. At Lovell's the 90 is worth 12 tons per fm. The 90 end east is worth 6 tons per fm., a good bed for tin. The 90 stope is worth 12 to 14 tons per fm. At Keteley's winze the 90 is worth 12 tons per fm. The 90 end east is worth 5 ft. in diameter, a good bed for tin. The 90 stope is worth 12 to 14 tons per fm. At Mathew's winze the 90 is worth 6 to 8 tons per fm. In the 70 east the lode is 7 ft. wide, thin, low-price stamping work. In the 100 end, the lode is 20 ft. wide, stamping work. In the 90 west the lode is 3 ft. wide, thin. In the 80 west no lode has been taken down for the week. In the 70 cross-cut there are 20 ft. In the 50 rise, Black Dog, a little over, not to value. Boscombe buildings are progressing with all dispatch.

**GREAT WHEAL MARTHA.**—H. Rickard, April 23: The 40, east of engine-shaft, since the last report is much improved for driving, former price 72s. per fm., now driving for 37. 10s., the lode being very large, the whole end being carried in the lode, and neither the north or south walls seen, yielding copper ore of good quality; no alteration in the western end in the same level. We are still making good progress in driving the 30, towards Thomas's shaft, by the side of the lode. The lode both in the rise and in the present end in the 20, west from Thomas's shaft, is worth for copper ore and mundic 15s. per fm. The tribute pitches are still looking well, and yielding their full supply in the different pitches. We shipped on Saturday last 110 tons of mundic, and sampled 90 tons of coppery mundic yesterday; samples are forwarded on by this post to the different buyers, and tenders to be received on Thursday next. I hope to commence preparations very shortly for sinking. As we have every prospect before us of making this a great and good mine at deeper levels, we shall commence taking out the foundation for engine-house and crusher in a few days, as we have to remove a few piles of ore now on the surface of the ground, no time will be lost in bringing these erections to a speedy issue. We have about 130 tons of copper ore crushed, and are still crushing.

**GREAT WHEAL VOR UNITED.**—T. Gill, S. Harris, F. Francis, April 23: In the 142, driving east of Metal engine-shaft, the lode is 2 ft. wide, wet for driving, and worth about 15s. per fm., and looks promising to improve shortly. In the 142, driving west of Metal shaft, the lode is very large; we have not taken it all down, but the part sampled has produced tin to the value of 15s. per fm. In the 132, east of Metal engine-shaft, the lode is 4 ft. wide, worth about 11s. per fm., and looks promising to improve. In the 132, driving west of Metal engine-shaft, the lode is large and wet; we have taken down any lode for the last 4 ft. in driving, therefore I cannot give you its value per fathom. In the 122, driving east of Metal engine-shaft, the lode is not so large as when reported on last week; it is about 1½ ft. wide, worth 50s. per fm. In a winze sinking below the 132, east of Metal shaft, the lode is 4 ft. wide, worth 100s. per fm. Metal engine-shaft, sinking below the 142, is about 15s. per fm., and looks not yet intersected the lode, but, from appearance of the ground, we have cut a branch running in the same direction as the lode. All our stopes, both east and west of the shaft, are much the same as reported last week. We are making good progress in enlarging Ivey's shaft below the 70. The new steam-whim at Ivey's works very well, and also all our machinery throughout the mine.

**GURLYN.**—W. W. Martyn, J. Rees, April 25: The mine is now drained and cleared to the stope to the bottom of the engine-shaft, or 9 fms. below the 50, on Bawden's lode. In the last 9 ft. sinking the lode is much improved both in size and value, being now 2 ft. wide, producing 1 ton of good quality copper per fathom of the shaft—12 ft. long. We regard this as being a very important discovery, which considerably enhances the value of the mine. The bottom level east is driven about 3 fms., and in this opening the lode of the mine, the stope in back of the 230 is 4 ft. wide, and worth 50s. per fm. for tin; the lode is about 1½ ft. wide, and worth 50s. per fm. for copper and tin; this communication will be made with all speed, in order to open up the bottom of the mine; the sump whim-shaft is being sunk below the 50 to meet the rise, and worth 50s. per fm. for tin. The 60 is extended about 30 fms. east of engine-shaft, and will yield 1 ton of ore per fm.; the lode in the winze sinking below this level is 1½ ft. wide, producing saving work, but not sufficient to value. In the 170 west the lode is 2 ft. wide, and will yield 1½ ton of ore per fm.—Footway Lode: In the 140 east, west of Bay's shaft, the lode is 3 feet wide, and will yield 1 ton of ore per fm.—Raashield's Lode: In the 60 west, north of Cock's shaft, the lode is 3 ft. wide, containing good stones of black, grey, and yellow copper ore. The lode in the rise in back of the adit level is 2 ft. wide, and will yield 1 ton of ore per fm. In the 60 east, north of Pedler's shaft, we have intersected a cross-course, which has disordered the lode for the present. The other bargains are much the same as

**REDMOOR.**—T. Taylor, April 22: During the past month we have driven the 40 west, on Johnson's lode, 3 fms. 8 ft. 4 in.; the lode in this end is small and poor; our object is to push on to see the lode, west of the cross-course, as far as possible; set to four men, at 6f. per fm. In the 80 west, Johnson's, we have cut the cross-course sooner than we expected, having struck down nearly perpendicular; the lode is 10 inches wide. We are now rising to communicate to the 70, which we hope to do by next setting-day; this will ventilate the mine, and give us a good piece of ground in the back of the 80 for stops on tribute. We shall also be in a position to resume the driving of the 70 west, in which the lode is worth about 9f. per fm. I may add we have had a hole or two in the lode, west of cross-course, which looks favourable; we have 22 men on tribute, averaging about 11s. in 11. for tin. We are getting on with the dressing as fast as possible.

**RHEIDOL.**—Capt. Ridge, April 20: In the river adit level the end has been driven a short distance during the past week, but the lode not being so good as last reported, we have thought it advisable to stop along the bottom of the level to prove the lode in depth. We have proved the ground 3 fms. long, and from 3 to 4 feet in depth; the lode at this point is 15 in. wide, yielding upwards of 1 ton of lead per fathom; the lode is bearing away westward, and from the depth of the lode already explored it is everything that can be desired for a still further improvement. The water being two much for us to stop with, we think it quite advisable to commence at once and extend the driving of the 12 fm. level cross-cut in bottom of the engine-shaft, which no doubt will intersect the lode at right angles. Nantglas deep adit level still holds out very promising appearances for lead.

**RHYSOCOG.**—A. Maraden, April 24: In the cross-cut south the miners have, as I anticipated, cut a very fine lode, east and west, 3 ft. wide, with copper and lead, but not of value. The south-west lode, that Mr. Michell saw, will make a junction with the above in about 5 or 6 fms. I shall move the miners in the beginning of the month to drive on this towards the junction, which I expect will make good ore.

**RIVER TAMAR.**—J. Cock, April 21: The ground in the cross-cut is strongly mineralised with copper, and it is highly probable that there is a lode not far beyond our present workings. I would, therefore, recommend to continue the driving of this cross-cut with all possible speed. No doubt it will one day or other be put right across the sett, and I fully believe that steady perseverance here will result in opening up a profitable mine. I think it would be advisable to drive a fathom or two on the branch lately cut in the cross-cut; it is worth a short trial.

**ROSEWARNE UNITED.**—E. Cartwheel, April 25: In the 90 west the lode is 2½ ft. wide, producing a little ore. In the 90, east of Jennings's shaft, the lode is 2 feet wide, yielding ½ ton per fathom of good ore. In the 88 and 94 west there is no change since last week. In the 46, east of Lane's shaft, the lode is 2½ ft. wide, with a promising appearance. In the 34, east of Lane's shaft, the lode is 2 feet wide, containing stones of ore. In the 22, east of Lane's shaft, the lode is 2 feet wide, yielding good stones of ore. The tribute pitches generally continue to look well.

**SIGFORD CONSOLS.**—W. Hosking, April 22: I am glad to report a considerable improvement in the north copper lode both in size and character; the lode is now from 2½ to 3 feet wide, yielding good stones of copper, and ground very congenial for further improvement; we are pushing on the work here as fast as possible. In the engine-shaft the ground is easier for sinking; I cannot report further as to the value of the lode here, as I shall not take down any more of it until a cross-cut is put through it in the next level, but the country has a very promising appearance.

**SILVER VEIN.**—F. Squire, April 25: The works, with the exception of Wednesday, in consequence of a slight accident to the furnace man, have gone on daily with the same visible and successful results. The mine remains in the same satisfactory condition for obtaining a large supply of ore, last reported. On Friday and Saturday a considerable quantity of ore will be raised. I am now placing down the zinc flooring for dressing the prepared ores previously to grinding for sampling. I shall personally neglect nothing which I may consider conducive to the true interests of the company. I am happy to say, looking over the treated ores, I cannot fail in having some very high results of silver. I feel confident, during the year, I shall produce tons of ore worth from 5000 to 10000 per ton, perhaps more. I have nothing whatever to do with opinions now so freely expressed; I can only say the objects for which the company was established are being legitimately carried out, and up to this time attended with success; and such is the general opinion of those in Cornwall who have inspected the ores, before and after treatment, at the works. I shall give no results from private assays; I am determined, if possible, to avoid all error, by giving the analyses of the yield of silver only from a very large quantity of finely-crushed ore. The company, as long as I represent it in Cornwall, shall stand alone on its fair commercial merits, of the result of which I have no personal apprehension, and am myself indifferent either to praise or censure.

**SORTRIDGE CONSOLS.**—R. Jackson, April 25: In the 110 east the lode is 2 feet wide, yielding good stones of ore. In the 50, driving west of Crew's cross-cut, the lode is 2 ft. wide, yielding good stones of ore. In Head's rise, in back of the 50, west of Crew's cross-cut, no lode has been taken down this last week. In the 50, driving west on No. 2 south lode, the lode is 1 ft. yielding stones of ore. In the 50, driving east on No. 2 south lode, the lode is small and unproductive. In Blanchard's stoves, in bottom of the 40, on No. 2 south lode, the lode is worth 1 ton of ore per fm. In Rose's stoves, in back of the 40, on No. 2 south lode, the lode is worth 2 tons of ore per fm. In the 30, driving east on No. 2 south lode, the lode is worth 15f. per fm. No change to notice in any other part of the mine.

**SOUTH CARADON WHEAL HOOPER.**—W. C. Cook, April 20: In the engine-shaft we have a floor of spar apparently of great thickness, and I hope to see a favourable change in the lode under it. The lode in the 62 east and west is spotted with copper ore, but continues small. In the 47 cross-cut the cross-course is about the same size as when I wrote last, but the ground about it is hard.

**SOUTH CONDURROW.**—J. Vivian, N. Thomas, April 24: The engine-shaft is now completed to the 30, and the same set to sink to the 40, by six men and three boys, at 14f. per fm; the lode is 4½ ft. wide, composed of gossan, spar, and mudi, impregnated with copper ore, and kindly in appearance. In the 15 east it is 3 ft. wide, kindly, and producing a small quantity of copper ore; set to two men and two boys, at 31. per fm. In the adit west it is 3½ ft. wide, composed principally of peach, containing a small quantity of tin; set to four men and two boys, at 51. per fm. In driving the same level east from Thomas's shaft, to meet it, it is 2 ft. wide, at present unproductive; set to three men and three boys, at 31. per fm. In the same level, west of cross-cut, it is 2½ ft. wide, a very kindly lode, and producing rich stones of copper ore.

**SOUTH CRENVER.**—E. Chegwin, April 23: In the 105 east no lode has been taken down for the week, but when taken down last it produced 1½ ton of good copper ore per fathom; we intend taking down the lode the end of the week. The tribute pitches in bottom of the 105 are looking well; we find the ore is lengthening as we go down, and in looking at the ore gone down in bottom of the 105 west, and the ore now cut in the 105 east if the shaft were sunk 20 fms., and levels driven east and west, it is my opinion that the mine would pay costs, and leave good profits to the adventurers. We purpose sampling this day 61 tons of copper ore.—South Mine: In the 51 cross-cut, south of new shaft, the ground is favourable, and a large stream of water flowing from the cross-cut.

**SOUTH DEVON IRON AND GENERAL MINING COMPANY.**—  
**ATLAS TIN MINE.**—Captain J. Warren, under date of April 25, writes:—"I have been underground to-day, and find the lode in the western end still improving in size and quality, it is 4 feet wide, and I value it at 35f. per fm. Judging from the character of the lode, as now seen, we are on the point of shot of tin going down in the bottom of the 10, and should it continue for 2 fathoms, White's shaft will go down into it. The burning-house will be completed and ready for burning the tin in about three weeks. There are about 6 tons of raw tin reduced, and about 4½ tons of it prepared for the burning-house. The stuff now being raised from the western end is, as you will learn from what I have already said about it, paying work. There are four heads at work during the day of 10 hours, which stamp out about 1 ton of stuff per day, but as we have now a picking table, &c., erected, we greatly reduce the pile as it comes from the lode, and improve the quality of the work."

**SOUTH LADY BERTHA.**—R. Unsworth, April 25: The stoves in the 40, east of Leaman's rise, is worth 2½ to 3 tons per fm. The stoves in the 40 west are worth 2 tons per fm. The lode in the end of the 40 fm. level is being taken down, and I will give the value next week.

**SOUTH TREASVEAN.**—S. Whitburn, April 25: Since last reported the lode in the engine-shaft has very materially changed; it is now 4 ft. wide, yielding some splendid mudi, with paryn and gossan, interspersed with spots of yellow copper ore. The stratum is changed to a lighter coloured killas, and the lode taking a better inclination; its underlie is about 1½ ft. in the lode.

**SOUTH WHEAL TOLGUS.**—April 24: Youren's Lode: Michell's sumpters have commenced cutting tip-plat in the 130. In the 130, west of Michell's shaft, the lode is 15 in. wide, composed of peach, jack, and mudi. The ground in the 130, east from Michell's shaft, driving towards the south lode, is rather hard. The lode in the 120 west is 1 ft. big, yielding 1 ton of ore per fm. In the 110 west the lode is small and unproductive. The lode in the 100 west is 2 ft. wide, consisting of peach, spar, mudi, and good stones of ore—a very kindly lode. The lode in the 90 west is 10 in. big, producing 1 ton of ore per fathom. The lode in the 90 west is 10 in. big, producing 1 ton of ore per fathom. The lode in the 78 west is producing 2½ tons of ore per fathom. In the 78 west the lode is 20 in. wide, composed of peach, soft spar, and mudi—a very kindly lode. The lode in the 66 west is 15 in. wide, consisting chiefly of quartz.—South Lode: In the 120 east the lode is 8 ft. wide, composed of spar, peck, and mudi, and is letting out a quantity of water. In the 110 east the lode is 2½ ft. wide—unproductive. We have holed the winze from the 100 east to the 110, which has given good ventilation in this part. The two stoves in back of the 110 east are each yielding about 2½ tons of ore per fathom. The lode in the 100 east is 20 in. wide, composed of peach and mudi—unproductive. The lode in the winze sinking in bottom of the 90 east is 2 ft. wide, consisting of soft spar and killas. The lode in the winze sinking in bottom of the 78 west, on Youren's lode, is 20 in. wide, composed of peach, spar, and good stones of ore—a very kindly lode. In the 78 west, on the new south lode, the lode is 20 inches wide, and consists of spar and mudi.

**ST. IVES WHEAL ALLEN.**—J. Pearce, H. Taylor, April 25: Giesler's Flat-rod Shaft: The 50, east and west, looks much the same as last week. The lode in the 40 west is 15 inches wide, with a promising appearance. The lode in the 30 east is 18 in. wide, and worth 18f. per fathom. In the 40, east of Louisa's shaft, on Roderick's lode, there is no change to notice since last week. The bottom of the 20, west of Louisa's shaft, is being stoned as fast as possible, and we expect soon to complete it. We calculate to hoist the 50, west of sump-winze, to the 50, east of Giesler's shaft, in about one week more. The lode in the 20, east of Highburrow shaft, is 15 in. wide, yielding tintaff, tintaff, but not enough to value. Nothing yet to notice in the deep adit, north of Highburrow, on the cross-course. The masons are progressing rapidly in building the steam-whim and stampa-house. Nothing else new.

**TAMAR SILVER-LEAD.**—F. Foot, April 24: There is nothing new in the 237 south since my last report. In the 226 south we have not cut through the lode, but hope to do so by the end of the present week; the two stoves in back of this level will yield 20 and 8 cwt. of lead per fm. We have taken down the lode in the 215 south, which is looking well; the stoves in back of this level, four in number, are producing as follows:—No. 1, 16 cwt.; No. 2, 9 cwt.; No. 3, 7 cwt.; and No. 4, 14 cwt. of lead per fm. The lode in the 205 south still continues poor; the stoves in back of this level, four in number, will yield on an average 4 cwt. of lead per fm.

**TEES SIDE.**—R. Bray, April 24: The Sun vein in Providence engine-shaft is from 2 to 3 ft. wide, of spar, jack, and a slight mixture of ore—very kindly. The north lode is making a turn in the shaft aqua; there is no doubt but when the two lodes do meet, we shall make a junction with each other, we shall have a bunch of ore as it comes in, when we commence sinking the shaft under the 24.

**TOUCARNE.**—April 24: Field's Lode: The lode at Field's shaft, below the 20, is 2½ ft. wide, worth about ½ ton of ore per fm.—a very kindly lode. The lode in the rise in back of the 20, east of shaft, the lode is 10 inches wide, unproductive. In the 20, west of shaft, the lode is 20 inches wide, composed of gossan, soft spar, and good stones of ore, a very promising lode. The lode in the winze below the 10, east of shaft, is 2 feet wide, composed of spar and gossan—a promising lode. In the winze below adit, east of Field's shaft, the lode is split into branches—unproductive.—Enthoven's Lode: The

lode in the adit level west is 4½ ft. wide, its value 50f. per fm. for tin. In the stope in back of the adit the lode is 2½ feet wide, and worth 50f. per fm. for tin.—King's Lode: The lode in the rise in back of the adit is 1 foot wide, and is producing a little black ore, kindly in appearance. King's shaft is being sunk from the surface by six men, at 3f. per fathom.

**TOLVADDEN.**—F. Gundry, J. Gundry, April 24: The engine-shaft is sunk 7 fms. below the 60; the present price is 23f. per fm. for sinking. The 60 is driven east from the engine-shaft 15 fathoms; the lode is large, and yielding good stones of yellow ore; some portions of this driving have yielded as much as 2½ tons per fm. The 60, west of the engine-shaft, is driven 22 fms.: the first 12 fms. of this driving was on the flookan course. At this point we cross-cut the lode, which was 10 ft. wide, and found a leader of grey iron on the north part of the lode 9 in. wide; 5 fathoms further on we cross-cut again, and found the ore to be of much the same character: 4 fms. further we cross-cut again, and find that the lode is so changed at this point, which is 7 ft. in length, that we can better cross-cut it here for 5f. per fm. in the lode, that we could at the former cross-cut for 18f. per fm. We consider from present appearances that we have discovered in this level the top of a fresh deposit of ore, which we have seen about 7 fms. in length, which is under 25 fms. of dead ground.

**TREFULACK UNITED.**—James Pope, April 20: The engine-shaft is cut down and secured 28 fathoms below the adit level, and the water drained to the 40, which we hope to complete by the end of the present month. The wood shaft is complete about 1 fms. below the 16; ground easy for sinking, which we think will be to the 26, by the end of the present month, when we expect to open some good tribute ground. In the 36, west of wheel-shaft, the lode is about 6 inches wide, opening good tribute ground. The wheel-shaft, sinking below the 26, is down about 4½ fms., and ground easy for sinking, which will take about three weeks to reach the 26, when we shall set some more pitches at once. In the 16 cross-cut south the ground is very easy for driving; here we expect to cut the counter lode by the end of the present month, which, from reports, is expected to turn out something good. We have three pitches at work—one at 6s. 8d., one at 8s., and another at 10s. in 12. the men getting good wages. From what can be seen of the mine I consider it a very promising concern, and I have no doubt as soon as we have cleared the different levels and put the mine in a proper state of working good returns will be made.

**TRELOWETH.**—T. Richards, April 19: The lode in the engine-shaft, sinking below the 13, is worth 15f. per fm. The 134 east is yielding a little copper ore. The 134 west contains a little copper ore, and the lodes promising for an improvement. The 134 east is 25 ft. per fm. The 134 west is worth 17f. per fathom. The winze sinking below the 124 west is worth 20f. per fathom. The winze sinking below the 124 east is worth 30f. per fm. The stope in back of the 134 east is worth 14f. per fm. The stope in back of the 124 east is worth 12f. per fm. The stope in bottom of the 134 east is from 8 to 1 ft. wide, producing stones of ore. We have not yet intersected the lode at the 80, west of Woodfall's, in the cross-cut, driving north of the great cross-course.

**TRENCROM.**—R. Hollow, Francis Bennetts, April 24: Giesler's engine-shaft is sunk below the 90 2½ fms.; the lode produces stamping work; set to sink, by six men, at 13f. per fm. In the 90, east of the engine-shaft, the lode is worth 21f. per fm.; set to drive, by four men, at 3f. per fm. In the 80, east of the engine-shaft, the lode is worth 12f. per fm.; set to clear, by two men, at 5s. per fm. In the 60, west of the engine-shaft, the lode is of a promising character; set to drive, by two men, at 2f. per fm. In the 60 cross-cut, south-east of the engine-shaft, we have about 12 fms. to reach the end; set to clear, by four men, at 3f. per fm. In the 60, east of the engine-shaft, the lode is worth 3f. per fm.; set to drive, by two men, at 3f. per fm. In the 50, east of the engine-shaft, the lode is worth 11f. per fm.; set to drive, by four men, at 3f. per fm. In the 40, east of the engine-shaft, the lode is worth 11f. per fm.; set to drive, by four men, at 3f. per fm. In the 30, east of the engine-shaft, the lode is worth 11f. per fm.; set to drive, by four men, at 3f. per fm. In the 20, east of Michell's flat-rod shaft, the lode is worth 3f. per fm.; set to drive, by four men, at 2f. per fm. In the 20, west of Michell's flat-rod shaft, the lode is not to value at present; we expect an improvement in this end as we get under the tin ground in the 10; set to drive, by two men, at 1f. 15s. per fm.

**TRUMPET UNITED.**—G. R. Odgers, April 20: We have driven the 15, east of the shaft, 8 ft.; lode 6 in. wide, from which we have broken some very good tin. The lode in the 15 is 10 in. wide, yielding good tinny work, worth 4f. per fm. We have fixed the two bobs, and next week we think we shall fit the flat-rods.

**UNITED MINES (Tavistock).**—J. Tucker, April 24: The shaft is down for a 60 fm. level; the men are now engaged dividing and casing it, to bring down the whim-kibble; this I hope will be completed by to-morrow noon. We shall then commence to drive a wide cross-cut, which has to answer for a plat. I hope to cut the lode in a fortnight or three weeks at most. We have new timbered and secured about 15 fms. of the lobby, and have not as yet succeeded in letting down the water in the wheel-pit low enough to stamp, therefore it will tell upon our next sampling.

**VALE OF TOWY.**—A. Waters, T. Harvey, April 23: In the present bottom of Clay's engine-shaft the lode (the position of which a short time since was vertical) is underlyng east, at an angle of about 30°; and from present appearances we calculate that what we consider to be the main part of the lode will come out into the line of the shaft by the time we reach the 100; we have cut into the lode some 2 or 3 ft., and find it composed of soft sulphate of barites, carbonate of lime, and blende, in large quantities, all of which is stained with lead, lead with other occasional stones of lead—more promising lodes man can see. The ground is of the right kind, and favourable for progress; and we hope to get the lift down the required depth for the next level by the end of the present month. The 90 south looks more kindly, and continues to open tribute ground.

**VENTNOR (Pantasa).**—T. Pierce, April 25: We have repaired the bottom of Grosvenor shaft, and shall now prepare to sink same as instructed. The forepart of the 64 ft. level is in a very strong vein, and promising ground; I am certain we shall have ore somewhere contiguous to this level, and probably the cross-cut we are now putting out to intersect the parallel lode may give it us.

**WEST BASSET.**—W. Roberts, April 24: In the 94 west the lode continues 3 ft. wide, producing about 1 ton of good ore per fathom. In the 84 west the lode is 3 ft. wide, worth 4f. per fm. The 84 west 5 tons per fm. The rise in back of the 65 produces 1 ton per fm.; lode 8 ft. wide. In the 50 west the lode is 2 ft. wide, very promising, with stones of good ore.—North Part of South Lode: In the 84 west the lode is 2 ft. wide, producing nearly 2 tons of ore per fathom. We shall sample this morning (computed) 42 tons.

**WEST CONDURROW.**—G. Jewell, April 24: Since our last report we have been engaged in cutting plat in the 12 at the engine-shaft, which we expect to complete in a day or two, after which we shall resume sinking. In cutting the plat we find branches in the country in the north side of the lode, and at 6 ft. from it, and they are composed of copper, jack, and lead, with a little tin. The appearance of these branches give a more encouraging appearance to the indications in connexion with the lode in the engine-shaft. The other parts of the mine are without change.

**WEST DEVON.**—Capt. Rowe, April 25: The water in this mine is being forked rapidly; the engine and other machinery is working well, and I hope by another week to give you a good account of the proceedings. We are forked upon the south shaft.

**WHEAL TREPUSIS.**—J. Tregoning, April 25: The lode in the 55, driving east of Nichol's shaft, is 5 ft. wide, composed of fookan, gossan, and spar. In the rise in back of the 55, east of the sump-shaft, the lode is 2 ft. wide, worth 6s. per fathom for tin; rising at 30s. per fm. In the 42, driving east of Nichol's shaft, the lode is 4 ft. wide, composed of gossan, marmite, and tin. In the end driving east and west of the cross-cut, on Gorden lode, south of the sump-shaft, at the 42, the lode is 1 ft. wide, composed of spar, peat, and a little tin, but not sufficient to value. In the 30, driving east of Nichol's shaft, the lode is 2 ft. wide, composed of gossan, fookan, and stones of copper ore. In our tribute department we have nothing new to notice.

**WHEAL UNITY CONSOLS.**—W. H. Reynolds, April 20: The lode in the flat-rod shaft is worth from 10s. to 12s. per fm., and is improving. In the 75 west the lode contains ore, and as we are nearly under the ore at the 65, we expect improvement. The stopes in back of the 75 are worth 4s. and 9s. per fm. respectively. In the 65, east of the shaft, there is a promising lode; and in the stopes, west of the shaft, the lode is worth from 12s. to 16s. per fm., for 3½ fms. long, and an ore lode for some fathoms longer than this. The south lode in the adit level is 2 ft. wide, spotted with rich ore, and letting out a good deal of water, and is altogether very kindly.

**WHEAL WREY CONSOLS.**—P. Clymo, W. Hancock, M. Whitford, April 25: The engine-shaft is sunk 7 fms. 4 ft. under the 106. The lode in the 106 south is 3 ft. wide, producing 4 cwt.s. of lead per fm.; in the same level north it is 1½ ft. wide, producing 4 cwt.s. of lead per fm. In the 96 south it is 4 ft. wide, producing 6 cwt.s. of lead per fathom; in the winze sinking under this level north it is 2½ ft. wide, producing 7 cwt.s. of lead per fathom. In the 84 south it is 3 ft. wide, producing 8 cwt.s. of lead per fm.; in the same level north it is 2 ft. wide, producing 5 cwt.s. of lead per fm. In the 74 north it is 2 ft. wide, producing 6 cwt.s. of lead per fm. We have removed driving the 64 north; the lode is 2 ft. wide, producing 4 cwt.s. of lead per fm. The stopes and pitches are producing much as usual.

**WORVAS DOWNS.**—R. Harry, April 23: The shaftmen are still engaged in fixing drawing-lift at the 20, which will be completed and got to work this evening, when we shall at once proceed to drop the sinking lift below this level, and by the end of another week we hope to see the water in fork to the 30. It will require eight or ten days more to put the shaft in complete working order for drawing the stuff from the 20. After this work is done, the clearing of the levels will be commenced, and carried on as fast as the nature of the work will permit. The shallow adit level has been cleared east of the engine-shaft 26 fms.; here we have met with a caunter lode, which has been opened on north and south of the main lode, but to what extent we are not prepared to say at present, the levels being nearly full of rubbish. At the point of intersection the lode is about 1 ft. wide, composed principally of spar, capel, prian, and tin, a very promising lode, and likely from appearances to produce fair quantities of tin in depth. Our surface operations are in regular progress, and everything going on as well as can be expected.

**YARNER.**—R. Barkell, April 24: In the north lode the 30 east is worth 2 tons per fathom; lodes 3 feet wide, ground not so easy for driving as we have had it for some time past. We have cut through the lode in the winze, which is 4 feet wide, worth 4 tons per fathom; the said lode is standing for 3 fathoms up the winze. The south lode, in the 30 east, is producing a little ore; lode looking promising, and letting out a great deal more water than we have seen before. No alteration in the 20 west; the same remark will apply to all other places.

#### MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

We gather from the various sources of information on the Mining Market that appearances are still more of the gloomy than the lively character; and were it not for the life infused into business by the extraordinary success of one or two mines, which give a considerable impetus to jobbing tendencies, there would be a small amount of real business to record; but, as matters really stand, the aggregate presents a more cheering view than it has done for many weeks of late. The tendency of metals to advance in value is also shown by a rise in tin, and such movements, once begun, are likely to continue, when it is considered that the condition of the market of late has been that of an almost absolute collapse as regards its chief aliment—that of provincial orders. On this particular point it is almost unnecessary to give explanations or assign causes, since they would lie in the serious amount of losses made by the best friends of the market—the supporters of new or progressive mines, numbers of which have gone in value to zero, after large outlays; many of them temporarily, it is true, from having succumbed wholly for want of the continuous support of capital; whilst their merits as mines of a legitimate character is testified to by their becoming the first shares sought after under more encouraging circumstances. The mine called KELL BRYN may be cited as a case in point, the shares in which are now in considerable demand; whilst, as a set-off to losses, and as an encouragement to parties never to absolutely give away shares unless upon unequivocal proof of the failure of a mine to produce ore at some time or other, take the instances of EAST CARADON and EAST GREENVILLE, their aggregate market value being at this moment about 140,000*s.*, whilst it is on record that a year or two since the former shares were absolutely valueless, and the latter, a few weeks ago, one-sixth only of their present value. Such instances, assuming that the advantages of the rise have been distributed, as all mining losses are, go far to compensate supporters of British mining pursuits, it seldom happening that a mine in 5000 or 6000 shares has not a constituency of at least 200 adventurers, the majority of whom, if the theory here propounded is a sound one, would "count their gains" as well as having been forced to submit to losses on other concerns; and an inference (it is hoped a sound one) from the above facts is that capitalists should rather adhere to the market under adverse circumstances, than expend all their zeal in buying largely during periods of great excitement, which invariably, it is to be regretted, are of short duration; whilst a lapsed market may have a long course from its first point of weakness to its periods of bad to worse. At the moment of this writing the "turn" appears to have begun; and to be assured of that is to be in possession of valuable knowledge, which may be turned of most account, upon the practical hint that holders of depreciated shares have before them two courses of action: first to attend to those in which they are not peculiarly interested; and second, to reduce a 5*s.* share, which can now be bought at one-fifth of its former value, to a low average, by an additional purchase, not forgetting that during a period of nine or twelve months of depreciation the mine has, or may have, had a large sum expended upon it, and neither reasoning nor sophistry can show that a house is not taller for having had a story added to it, the object of the additional work being, of course, to enhance its value in the same proportion as additional levels driven and shafts sunk in a mine add to its value by the prospective diminution of capital necessary to develop it; assuming always, however, that the undertaking is a legitimate one in all essential respects, and that so far from in the end becoming a myth it will become a mine, and like EAST CARADON (before alluded to) reward its supporters with handsome dividends.

**The COED MAWR POOL LEAD MINE,** near Llanrwst, is now being developed with successful results. The returns from the boundary, the No. 1, and Wasley's lodes, though these lodes are not yet sunk below 20 fms., are regular, and increasing in value with the driving and the sinking. A parcel of 12½ tons was sold at the Treffew Quay, last week, at 12½ tons. per ton, cash payment, and a further quantity of about 12 tons, consisting of round and small ore, has been disposed of this week at 13½ tons. for the former, and 12½ tons. per ton for the latter, delivered at the same quarry, and payable by cash on delivery. The last account from the mine reported that all the works were in full activity, and the ore ground on the various lodes continued to open well. The water supply was also abundant, and means were taken to increase the reserves in the reservoirs and channels, to be prepared for the possibility of a dry summer. The report from Mr. C. B. Bennett, C.E. (which recently appeared in this Journal) has had, as it deserves, the attention of the directors and shareholders. Mr. Bennett inspected all the underground works at the boundary, the No. 1, and the Wasley shafts, and he decidedly advises the extension of the operations, both in the present levels and the further sinking, as certain of valuable results, the lodes seen by him bearing evidence of present value and of increasing richness in their descent. At the present depth of only 20 fms. the produce averages almost 1 ton the fathom. The fair inference is that such lodes, so regular and well defined, and so improving in the descent, will be found largely productive at a lower depth. Mr. Bennett advised the immediate erection of a 50-inch cylinder engine, to command the water to a great depth, and has no doubt of highly profitable returns: in fact, he pledges himself that the mine would then become one of the richest properties in Wales. The directors, at their meeting, resolved for the present to push on the driving and the sinking to the full extent commanded by the existing water-power, which is equal to a further sinking of at least 10 fms., and, meanwhile, to concert measures for the future extension of the operations, the provision for which could be made either by applying the surplus returns from the produce in the present levels, the sale of the shares originally reserved for additional capital, or the declaration of an adequate call, as might be hereafter determined by a general meeting of the shareholders.

**THE TAVISTOCK DISTRICT.**—Well-wishers to mining will rejoice to find that there are signs of renewed activity and great promise of success in this district. GREAT WHEAL MARTHA, after a long struggle, is looking exceedingly well, and raising large quantities of ore, which only require the necessary machinery to enable it to make profitable returns. This has been ordered, and the buildings are in course of erection. WEST DEVON (formerly Wheal Williams), an adjoining mine, has started under good auspices. The engine was put to work in the presence of a large company of mining men; Mr. Trotter, the secretary, by whose exertions a new company, with ample capital, has been formed, occupied the chair, supported by Mr. Thos. Nicholls (the Forester of Tavistock) as Vice-Chairman, who gave some interesting particulars of the former working of the mine. It appears that it was first taken up when the great discovery at Devon Great Consols took place, and at such exorbitant dues that even, as was stated at the meeting, that mine could not have paid a profit to any one but the lord at similar dues. The mine was again started; and had the counsels of local parties prevailed, and the operations of the mine been concentrated on some one fixed point, instead of a more diffusive and, therefore, unprofitable mode of working, it would be this have become profitable. It remains for the present company, under better management, to reap the advantages which, in the opinion of all practical miners, including some of the agents of Devon Great Consols, cannot fail to accrue. There are also very promising results to be expected from WHEAL CONCORD, which, in addition to the lodes formerly worked on, contains those of Colacombe. DEVON UNION (near Tavistock) is also evidently opening up lodes with indications of large deposits of ore in depth. Capt. Z. Williams, of Wheal Friendship, is superintendent agent of this latter mine; Mr. W. S. Trotter, of Great Winchester-street, is the secretary; and it is hoped that Concord, Union, and West Devon will amply reward this gentleman for his judgment in selection and energy in carrying out these undertakings.

CRELAKE is now standing second to Devon Consols in produce and amount, having left some of our other mines in the shade. Next sampling is expected to be 500 tons copper and 50 tons lead, which will realize nearly 4000*s.*, against 2000*s.* cost.

**BRYNFELIN.**—Captains M'Ewen and J. Glover, under date April 23, report:—In the adit, level with the river, two pipes of ore have already yielded over 500 tons, of an average of 8½ per cent. for copper. A third pipe of ore is known to exist eastward, before reaching the junction. A very large body of ore is expected where the three lodes meet. A trial has been made at this point, near the surface, and 2 tons of ore have been extracted from a very small space. Speaking from analogy, in a short time this mine will be a first-rate paying one. Very few can boast of yielding such quantities of ore so near the surface, and giving such indications of large bodies in depth; none better situated for transit of ore, nor with greater facilities for working. The raising of ore can be carried on simultaneously with the working of the mine, which is situated near Beddgelert, close to the River Glaslyn, North Wales.

The machinery has got to work at BRYNAMBOR MINE, which is situate 4½ miles from the great Nant-y-Mwyn Mine, and upon the Llanfair Clydogau silver-lead lode, the ore of which mine contains 80 ozs. of silver to the ton, and is now worth upwards of 30*s.* per ton. The ore of Brynambor Mine is the richest-looking lead ever seen: there are specimens of it at the office, Crown-court, Threadneedle-street, and at the Crystal Palace.

**LEAD MINING IN GLAMORGANSHIRE.**—An influential company, upon the limited liability principle, is in course of formation, with a capital of 7500*s.*, i.e. shares, for working a valuable mineral property in the parish of Llangua, held on lease, at a royalty of 1·15, and a dead rent of 18*s.* per annum, from Countess Dunraven and Mr. Huckwell. The geological position of the sett is regarded as highly favourable, the

strata being similar to those in which all the best mines of the district are situated. From parallel lodes adjacent large quantities of lead have been obtained at some former time, whence adequate profits are anticipated for the Glamorganshire Lead and Barites Mine. The property has been carefully inspected and favourably reported upon by Capt. J. Hodge, of West Fowey, and by the managing director, whilst the value of the ore is attested by the analysis of Mr. Ogston, of Mark-lane.

**BRYN GWILOG.**—A splendid course of ore has been cut in the 105 end west, by far richer than anything previously discovered in this mine.

**MINING COMPANIES UNDER THE WINDING-UP ACTS.**—A return has been presented to Parliament regarding every joint-stock company wound-up or winding-up under the Acts of 1848 and 1849. It gives the title of each concern, and shows the amount which the shareholders have been compelled to contribute to the liquidation. In some cases the assets were nil; and in one instance the official manager has been unable to recover even the cash expended for the requisite advertisements of the winding-up. We append the particulars of the several mining companies, from which it will be seen that the Mexican and South American Company occupies the worst place, the contributions in that instance having reached 77,289*s.*

#### MASTER OF THE ROLL'S CHAMBERS.

	£ s. d.
Bedmin United Mines.....	2,563
Boworthen Mining Company .....	675
Cae-Cynon Mining Company .....	—
Dhuoro Copper Mining Company .....	3,146
Liversedge Iron Company .....	2,770
Mandale Mining Company .....	—
Mexican and South American Mining Company .....	77,289
Mineral Court Mining Company .....	732
Nantlle Vale Slate Company .....	687
Trevena Mining Company .....	2,588
Wheat Helen Mining Company .....	1,208
Wylam's Steam Fuel Company .....	51
VICE-CHANCELLOR WOOD'S CHAMBERS.	
Birch Tor and Ulfiter Mining Company .....	2,108
Cwmdu Rock and Green Lake Copper Mining Company .....	1,897
Crookhaven Mining Company of Ireland .....	4,168
Court Grange Silver-Lead Mining Company .....	150
Esgair Mwyn Mining Company .....	5,692
Fat Works and Wheal Virtue Tin Mining Company .....	81
Furdon Manor Mining Company .....	963
Great Cambrian Mining and Quarrying Company .....	3,461
Kilbricken Mines Company .....	2,475
Lake Bathurst Australasian Gold Mining Company .....	—
Mixon Great Consols Copper Mining Company .....	1,363
New Engine Coal Mining Company .....	—
Paragon and Spence Coal Mining Company .....	—
St. Denis Consols, China Clay-works, and Tin Mining Company .....	2,874
VICE-CHANCELLOR KENDRICK'S CHAMBERS.	
Anglo-Californian Gold Mining Company .....	8,467
National Patent Steam Fuel Company .....	12,291
Wrysgan Slate and Slab Quarrying Company .....	6,180
VICE-CHANCELLOR STUART'S CHAMBERS.	
East Dean Coal and Iron Mining Company .....	782
Welsh Potosi Lead and Copper Mining Company .....	2,623

\* \* With this week's Journal we give a SUPPLEMENT SHEET, in which appears Papers on the Utilisation of Blast-Furnace Gases (illustrated)—"Old Bones"—Ancient Geology—Composition Steel and India-rubber Springs (illustrated)—Mining Machinery: Boring and Wind-ing Apparatus (illustrated)—Safety Apparatus for Mine Shafts (illustrated)—The West Polmear Mining District (with plan)—Facts on the Nature and Action of Steam—Increasing Value of British North America—Productive Cargo of Coal—Literary Notices: Handy Book of Patent and Copyright Law, English and Foreign—Coal Fields of Indiana—Iron: its History, Properties, and Processes of Manufacture—Railway Construction—The Engineer's Manual of the Hydrometer.

#### The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, April 26, 1861.

	BRASS. Per lb.	IRON. Per Ton.	SPELTER. Per Ton.	ZINC.
Sheets .....	914d.—10d.	6 10 0 —	18 10 0 —	—
Wire .....	914d.—91d.	6 10 0 —	18 12 6 —	—
Tubes .....	103d.—11d.	6 10 0 —	24 0 0 —	—
FOREIGN STEEL. Per Ton.				
Swedish, in kgs (rolled) 16 10 0 —				
(hammered). 17 0 0—18 0 0				
Ditto, in faggots .....				
English, Spring .....				
Bessemer's Engineers Tool 44 0 0 —				
Spindle .....				
QUICKSILVER .....				
Per bottle.				
TIN. Per Ton.				
English, blocks .....	125 0 0 —			
Ditto, Bars (in barrels) .....	126 0 0 —			
Ditto, Refined .....	127 0 0 —			
Ditto, forge, f.o.b. in Tees .....	—			
Staffordshire Forge Pig. 3 10 0 — 3 12 6				
Welsh Forge Pig .....	—			
LEAD. Per Ton.				
English Pig .....	21 0 0 — 22 5 0			
Ditto sheet .....	21 15 0 — 22 0 0			
Ditto red lead .....	23 0 0 — 24 0 0			
Ditto white .....	30 0 0 — 31 0 0			
Ditto patent shot .....	24 0 0 — 24 10 0			
Spanish .....	20 5 0 —			
In London .....	20s. less at the works.			
Yellow Metal Sheathing... p. b. 91d.				
Indian Charcoal Pigs .....	6 12 6 — 6 15 0			
In London .....	6 12 6 — 6 15 0			
At the works, 1s. to 1s. 6d. per box less.				

**REMARKS.**—This market has evinced considerable briskness during the week, and sales are reported in most metals. The low rate of discount in the money market, and the more favourable accounts from abroad, have exercised a most beneficial influence on the metal trade, which now appears to be assuming a more healthy tone than for some months past; prices for the most part show a disposition to go higher. On comparing those of the present time with the rates ruling at the corresponding period last year, they show an average decline of about 8 per cent. This, it will be acknowledged, is a very considerable difference, and it cannot be wondered

but show no disposition to buy beyond their most urgent wants. The declining tendency of the London and Amsterdam markets has so far been without further depressing influence on our prices, which have been for the last five months much below the foreign quotations. It remains to be seen what the future course of the English smelters will be, and how far the tin-plate trade is really affected. The consumption there has for the moment seriously decreased, and this must tell on the result of the Dutch auction. Our own market will be more influenced by the shipments from the East Indies, which are expected to fall off at once.—*Spirer*: There has been no sale of any consequence for the past two months. We quote Silesian nominally 43*c.* cash; stocks, 2500 tons. Owing to an erroneous description of the article in the Tariff Bill, the question arises whether yellow or sheathing metal will be admitted free of duty, or will be charged 30 per cent. *ad valorem*, like other unenumerated articles. The bill gives the dimensions per square yard instead of square foot.—*Copper*: The domestic manufacturers are not buyers of large quantities, but exporters have taken about 600,000 lbs. at 19*c.* per ton, for Lake and 19*c.* for Baltimore; 300 tons of Chile are going forward from first hands to Havre. The nominal quotations of to-day are 20*c.* per ton for Lake and 19*c.* for Baltimore. The stock of Lake is reduced to about 500,000 lbs. The accounts from Lake Superior promise a large supply for next summer, and we expect that the export trade in this article will be even more important after June than it has been for the last nine months, as prices will necessarily be moderate as long as the domestic manufacturing interest remains as depressed as it is at present. The exports since our last have been—From New York to Havre 256,000 lbs., 209,000 lbs. Chile, Rotterdam 13,000 lbs., Bremen 5000 lbs., Antwerp 20,000—533,000 lbs.; from Baltimore to Holland, 82,000 lbs.—Lead is quiet; the stock is estimated at 7500 tons, with but little offering at present prices. We quote Spanish, \$5.30 to \$5.35; Stoiberg, \$5.35 and \$5.40.

We stated last week that a rise was probable both in tin and copper, and while the latter is very firm, and the market in a healthy state, the standard for ore is rising, and tin has advanced 5*l.* per ton; the latter is important for the tin mines, and we hope it may prove the precursor of a further advance. In the SHARE MARKET there has not been a very large general business doing, but an enormous amount transacted in East Grenville, almost to the exclusion of other mines; in fact, we believe the attention of the market has never before been so entirely absorbed by one mine as it has been of late by East Wheal Grenville, and it is fortunate for the shareholders, and for the public, who have been investing so largely, that perhaps no mine has ever been submitted to such an ordeal of inspection, and in no case has there ever been such unanimity in the opinion of the best practical agents as to the value of this mine as a speculation. The fluctuations during the week have been very considerable, and as there are known to be large "bear" accounts open, the settling on Tuesday is looked forward to with some anxiety. At the meeting, on Wednesday, the accounts showed 409*l.* 4*s.* 6*d.* of liabilities over assets, and a call of 2*s.* per share was made. Some of the tin sold at the sale for 70*s.* per ton, and before the next meeting the agent hoped to sell from 2 to 3 tons. The lode in the shaft for copper ore is valued at 30*s.* On Monday, shares opened firm, but were put down during the day to 36*s.*, leaving off 38*s.* On Tuesday, they advanced to 50*s.* Wednesday, shares in great demand, and advanced to 58*s.*, 58*s.*, and large buying orders, it is said, up from Cornwall. On Thursday, opened firm, and buyers at 57*s.* 6*d.*; then they dropped to 52*s.* 6*d.*, and left off 52*s.* 6*d.* to 53*s.* 6*d.* On Friday, they opened 56*s.*, became in great demand, and after a large business leave off 58*s.* to 60*s.* It will be seen by this that the fluctuations have been very great during the week, rendering it difficult to transact any satisfactory business in the shares. A resolution was unanimously passed at the meeting, that in future one day a week, Friday, should be set apart for inspections; that the agent should report once a week only, and telegraph any changes that may take place at any other time. The last telegram received on Thursday was to the following effect:—"The lode maintains its size, looking equally as well; the 25 fathom level west is 3*f.* feet wide, a kindly lode." On Friday another telegram stated—"The lode in the 25 west is very much improved in appearance." Alfred Consols, 2 to 2*½*; Calvadnack, 3*½* to 4*½*; Carn Brea, 85 to 90; Ding Dong, 8 to 10; East Alfred shares have been in demand, and advanced to 25*s.*, 27*s.* 6*d.*, but leave off flatter at 22*s.* 6*d.* to 25*s.* East Basset, 97*½* to 102*½*. Cook's Kitchen, 18 to 20; at the meeting, to be held on May 7, we understand there will be a dividend of 7*s.* 6*d.* per share, and the rise of tin, we hope, will enable a larger dividend to be made at the following meeting. The mine is looking well. East Caradon shares have been flatter at 18*½* to 19*½*. East Russell, 6*d.* to 6*s.*; Great South Tolpuddle, 4*½* to 5*½*; Herodsfoot, 27 to 29. Pendene, 5*½* to 5*¾*; at the meeting the accounts showed a balance in favour of the mine of 2126*l.* 1*s.* 4*d.*; the profit on the two months was 300*l.* 6*s.* 3*d.* The report is favourable, and such as to justify the expectation of a dividend at the next meeting. The 118*s.* north of shaft, has been driven 5 fms., the lode yielding 5 tons of ore per fm.; the stopes are yielding their usual quantities of ore, and the agents consider the prospects of the mine have never been better than at present. Great Rettallack shares have been firm all the week, and leave off 24*s.* to 26*s.* The agent reports that the lode in the bottom level contains more quartz, with good crystals of lead. West Trevelyan shares have been in request at 3*½* to 4*½*, but difficult to get; the mine is improving, and good yellow ore coming into the 48 end. Lady Bertha shares have advanced to 27*s.* 6*d.*, 30*s.* Marke Valley shares have been flatter at 6*s.* to 7*½*. North Basset, 5 to 5*½*; at the meeting, on Wednesday, the accounts showed a balance against the company of 416*l.* 1*s.* 4*d.*, and a call of 3*s.* per share was made. East Carn Brea shares have been flatter, and leave off 8 to 8*½*; at the meeting, on Thursday, the accounts showed a balance against the company of 429*l.* 6*s.* 10*d.*, and a call of 3*s.* per share was made. The report states that since the previous meeting the 50 cross-cut had been extended 5 fms., and had intersected the middle lode, worth 1 ton of copper ore per fm. for the 3 fms. driven on. On the south lode, eastern end, the 40 produces 2 tons of ore per fm.; the western end, 3 tons. The cost for the next four months will be about 500*l.* per month, and the ores returned estimated as sufficient to meet the cost.

Merlyn, 12*s.* to 14*s.*; New Seton, 45 to 50; New Treleigh, 40*s.* to 45*s.*; North Wheal Busy, 3*½* to 4*½*; North Downs, 3*½* to 4*½*. North Minera, 29*s.* to 31*s.*, and a very large business done. North Robert, 10*s.* to 15*s.* Bryn Gwilog shares have advanced from 38 to 40; the mine is looking well, particularly so in the 105 yard level west, worth, it is said, 5 tons of ore per fm. West Bryn Gwilog, 37 to 39; there is here also a most promising lode at the eastern shaft. Billins, 20 to 22; Silver Rake, 19 to 20; North Roscar, 18 to 19; North Treskerby, 22 to 24; Providence Mines, 39 to 41; Rosewall Hill and Ransom, 30*s.* to 32*s.* 6*d.*; Rosewarne United, 20 to 22*½*; South Caradon, 300 to 305; South Caradon Wheal Hooper, 10*s.* to 12*s.*; South Condurrow, 14*s.* to 16*s.* Holmbois, 2*½* to 2*¾*; mine looking well. South Frances, 135 to 140; Stray Park, 35 to 36; Tamar Consols, 1*½* to 2*½*; Tincroft, 5*½* to 5*¾*; Trumpet United, 14*s.* to 16*s.*; West Basset, 17 to 18; West Caradon, 71 to 73; West Rose Down, 11*s.* to 12*s.*; West Seton, 345 to 355; West Wendron, 11*s.* to 13*s.*; Wheal Basset, 95 to 100; Wheal Buller, 107*½* to 112*½*; Wheal Clifford, 180 to 190; Wheal Crebor, 10*s.* to 12*s.* Wheal Greville, 2*½* to 2*¾*; the 100 fm. level west is now reported to be worth 1 ton of copper ore per fathom, and a great deal of water issuing from the end. This is getting under the ore ground in the 90. West Frances, 16*s.* to 17*s.*; at the meeting the accounts showed a balance against the company of 539*l.* 9*s.* 11*d.* A call of 3*s.* per share was made. Wheal Harriett, 40*s.*; Wheal Lupton, 3*½* to 3*¾*; Wheal Margaret, 47 to 48; Wheal Mary Ann, 12 to 13; Wheal Moyle, 2 to 2*½*; Wheal Seton, 65 to 70; Wheal Trelawny, 13 to 14; Wheal Unity, 8*s.* 6*d.* to 9*s.* 6*d.* Wheal Uny, 4 to 4*½*; not quite so firm. Wheal Wrey, 12*s.* 6*d.* to 15*s.* Great Wheal Fortune, 10 to 11; at the meeting the accounts, crediting 60 tons of tin sold during the quarter, showed a balance of 494*l.* in favour of the company. West Stray Park, 4*½* to 5*½*; Dolcoath, 490 to 500; Trewoole, 5 to 5*½*; Wheal Agar, 3*½* to 4*½*; Trelloweth, 3 to 3*½*; New Wheal Frances, 9*s.* 6*d.* to 10*s.* 6*d.*; North Frances, 4*½* to 5*½*. Great Alfred, 12*s.* 6*d.* to 15*s.*; at the meeting the accounts showed liabilities over assets 2668*l.* 10*s.* 3*d.*, and a call of 3*s.* per share was made. The ores sold since last meeting realised 3176*l.* 2*s.* 7*d.*, while the costs amounted to 5136*l.* 13*s.* 3*d.* for three months. The costs, therefore, have not been met by the returns, as promised at the last meeting. United Mines, 30 to 35.

On the Stock Exchange, business in Mining Shares has exhibited a more animated appearance, and with increased firmness in prices. The following quotations were officially recorded in British Mining Shares:—Lady Bertha, 1, 1*½*; Grenville, 2*½*, 2*¾*; Devon Great Consols, 34*s.*; Wheal Kitty, 9*½*; Wheal Edward, 2*½*; Wheal Trelawny, 12*½*; East Caradon, 19*s.* In Colonial Mining Shares the prices were:—Great Northern Copper of South Australia, 1*½*, 1*¾*; Bon Accord, 4*½*; General, 2*¾*; Port Phillip, 4*½*; Worthing, 4*½*. In Foreign Mining Shares the prices were:—St. John del Rey, 31*s.*, 31*¾*, 31*½*; United Mexican, 6*s.*, 6*¾*, 6*½*; Fortuna, 2*½*; Mariquita, 4*½*; Kapunda, 2*½*, 2*¾*.

Foreign and Colonial Mining Shares have been inactive during the week "outside," and but few transactions to note, previous quotations being, however, fully maintained. These periods of inaction are noticeable, and often occur in the market for these shares, but are not to be attributed to any adverse reports, because in most instances it is the absence of any information that causes the lull, and it may also be noticed that the

fluctuations in the money market do not affect these shares to so great an extent as other classes of stock. St. John del Rey, 31 to 31*½*; Worthing, 4*½* to 5*½*; United Mexican shares have been most dealt in, and leave off 6*s.* to 6*¾*; Fortuna, 2*½*; General, 2*¾* to 2*¾*; Mariquita quiet, at 4*½* to 5*½*; Kapunda, 2*½* to 2*¾*; Great Northern, 1*½* to 1*¾*; Port Phillip, 4*½* to 5*½*; Bon Accord, 4*½*.

IRISH.—On the Dublin Exchange the following have been quoted during the week:—Carysfort, 12*s.* 6*d.*; Castleward, 16*s.* 6*d.* to 17*s.*; Connor, 47*s.*; General, 5*s.* to 5*¾*; Mining of Ireland, 14*s.*; Wicklow, 67*s.* ex div.

At Redruth Ticketing, on Thursday, 2402 tons of ore were sold, realising 14,406*l.* 12*s.* The particulars of the sale were:—Average standard, 133*s.* 16*s.*; average produce, 6*s.*; average price per ton, 6*s.*; quantity of fine copper, 157 tons 1 cwt. The following are the particulars:

Date.	Tons.	Standard.	Produce.	Price per ton.	Ore copper.
Mar. 28.....	3507	£130 14 0	6 <i>s.</i>	£5 14 6	£88 5 6
April 4.....	3381	135 6 0	5 3 6	88 6	6
11.....	3297	131 7 0	6 <i>s.</i>	90 13 0	0
18.....	4675	139 6 0	6 <i>s.</i>	91 1 0	0
25.....	2402	133 16 0	6 <i>s.</i>	6 0 0	91 14 0

Compared with last week's sale, the advance has been in the standard 7*s.*, and in the price per ton of ore 2*s.* Compared with the corresponding sale of last month, the advance has been in the standard 3*l.* 2*s.*, and in the price per ton of ore 5*s.* 6*d.*

The Tin Standard has advanced 5*l.*; the present quotations are—common, 114*s.*; refined, 116*s.*

At North Wheal Basset meeting, on Wednesday, the accounts for Jan. and Feb. showed—Balance last audit, 690*l.* 0*s.* 6*d.*; labour, merchants' bills, and tribute, 1461*l.* 14*s.*; royalty, advance on tribute, and sundries, 110*l.* 17*s.* 4*d.*; 2262*l.* 11*s.* 10*d.* By call, 1246*l.* 6*s.*; copper ore, 12*s.* 6*d.*; tin, 267*l.* 15*s.* 2*d.*; tribute and fines, 80*l.* 12*s.* 6*d.*; leaving to debt, 416*l.* 21*s.* 15*s.* 4*d.*; to meet which they have arrears of call, 337*l.* 6*s.*; sale of copper ore, March 14, 371*l.* 2*s.* 11*d.*; due for tin sold, 226*l.* 12*s.* 6*d.* A call of 3*s.* per share was made. The agents sampled on Wednesday 110 tons copper ore.

At the Lady Bertha Mine meeting, on Thursday (Mr. Peter Watson in the chair), the accounts showed a balance of assets over liabilities of 1039*l.* A call of 2*s.* per share was made. Messrs. P. Watson, Upston, and Steele were appointed the committee of management. Details in another column.

At East Wheal Grenville meeting, on Tuesday (Mr. F. R. Wilson in the chair), the accounts showed a balance of liabilities over assets of 409*l.* 4*s.* 6*d.* A call of 2*s.* per share was made. Details appear in another column.

At Pendene Consols meeting, on Tuesday (Mr. W. Bawden in the chair), the accounts showed a credit balance of 2126*l.* 1*s.* 4*d.* The profit on the two months' working was 800*l.* 6*s.* 3*d.* It is anticipated that at the next meeting a dividend may be declared. The committee were re-elected. Details will be found in another column.

At New Crow Hill Mine meeting, on Wednesday, the accounts showed a credit balance of 254*l.* 16*s.* 9*d.* The agent stated that there is a large lode standing in the 15, 22, and 35 fm. levels going east, and the lode in the former level has much improved: it is large, and yielding increasing quantities of lead: last month five men raised 2*½* tons of lead ore from these stopes, and this month they will raise about 3 tons, on a tribute of 10*s.* in 1*l.* The men have begun to get the engine-shaft in course to sink below the 55, and altogether the prospects of the mine are very encouraging.

At the Carn Vivian Mine meeting, on April 17 (Mr. W. Murray in the chair), a call of 7*s.* per share was made, to carry on the mine vigorously. A report from Capt. Polglase and Euston was very encouraging, and gave general satisfaction.

At the Bedford Consols quarterly general meeting, on Thursday (Mr. J. Rowlands in the chair), the accounts showed—Balance last audit, 30*l.* 10*s.* 8*d.*; call, 300*l.* = 330*l.* 10*s.* 8*d.*; Three months' labour cost, 248*l.* 7*s.* 9*d.*; sundries, 7*s.* 3*d.*; leaving a credit balance of 74*l.* 19*s.* 11*d.* A call of 1*s.* per share was made.

At the Penhalls Mine meeting, on Tuesday (Mr. Langley in the chair), the accounts showed a credit balance of 42*l.* 18*s.* 1*d.* Details in another column.

At Crookhaven Mine meeting, on Thursday (Col. Bush in the chair), the accounts showed a balance of liabilities over assets of 2068*l.* A call of 3*s.* per share was made. Details were expressed at so many being in arrear of call, and it was resolved to enforce payment. The Dublin finance committee's circular was considered unjustifyable. About 70 tons of copper ore has just been unloaded at Swansea. Details in another column.

At Great Wheal Fortune meeting, on Tuesday, the accounts showed a credit balance of 494*l.* 14*s.* 10*d.* It is stated that the mine has improved, and the returns will be increased. With a better price for tin, a dividend may be expected next account.

At the Great Wheal Alfred meeting, yesterday (Dr. A. Beattie in the chair), the accounts showed a balance of liabilities over assets of 2668*l.* A call of 3*s.* per share was made. Details in another column.

At Wentnor Mine meeting, on Tuesday (Mr. C. R. West in the chair), the accounts showed a credit balance of 190*l.* 19*s.* It is stated that the mine has improved, and the returns will be increased. With a better price for tin, a dividend may be expected next account.

At the Great Wheal Alfred meeting, yesterday (Dr. A. Beattie in the chair), the accounts showed a balance of liabilities over assets of 2668*l.* A call of 3*s.* per share was made. Details in another column.

At the Trevenen Mine meeting, on Tuesday (Mr. C. R. West in the chair), the accounts showed a credit balance of 190*l.* 19*s.* It is stated that the mine has improved, and the returns will be increased. With a better price for tin, a dividend may be expected next account.

At the Great Wheal Alfred meeting, yesterday (Dr. A. Beattie in the chair), the accounts showed a balance of liabilities over assets of 2668*l.* A call of 3*s.* per share was made. Details in another column.

**W R E Y C O N S O L S.**  
In 4096 shares. On the "Cost-book PRINCIPLE."

A grant of a very extensive sett has been obtained from Sir Boushier Wrey, for 21 years, at 1-16th dues, and a rental of £10 per annum.

The grant was made to Captain W. V. Williams, who has expended about £1400 in driving levels, purchase of machinery, payment for sets, &c.

The mine is situated at Holme, Devon, and lies south of the Dartmoor granite, with lodes discovered and developed, having cross-courses and other favourable geological features, particulars of which will be gathered from the reports of the following agents:—Capt. Charles Thomas, of Dolcoath Mine, Camborne; Capt. Wm. Nancoar, of East Bassett Mine, Redruth; Mr. George Herwood, F.G.S.; Capt. W. Goyne, of Holme; Capt. W. Hosking, of Ashburton; Capt. John Hancock, of Polberno Mine, St. Agnes; Capt. Robert Dunstan, of Wheal Emma, Buckfastleigh; Capt. J. P. Nicholls, of Exmouth and Frank Mills Mines, Christow.

An engine-shaft has been sunk and timbered from the surface 14 fms., the adit level driven 55 fms. on the course of the lode, with winzes sunk and cross-cuts driven where required, as well as a roadway into the mine, with water-course and wheel-pit excavated.

A 36-feet water-wheel, with pumping crank, drawing machine, balance beams, rods, pulleys, chains, winches, shears, pumps, and various other necessary machinery and materials, which are necessarily required, have been paid for, and are now on the mine, and will be the property of the shareholders.

This ground is much more easily developed than ordinary sets, as a good stream of water, with 14 fms. fall, passes down the valley, which is sufficient for pumping and winding to a great depth, as well as for crushing.

The present proprietor agrees to dispose of 3000 shares, at 10s. per share; 5s. of which is to form a working fund, and will be sufficient for erection of water-wheel and the cost of the mine for some months; the other 6s. is to be paid to the present proprietor.

Application for shares to be made to Mr. J. O. HARRIS, shambrook, 24, Southernhay, Exeter (nearly nine years with Mr. C. Wescob, Exeter), from whom prospectus and reports can be obtained.

WREY CONSOLS MINE.

24, Southernhay, Exeter, April 18, 1861.—Sir: I beg to call your attention to the following, in connection with the enclosed prospectus of this mine:—3000 shares out of the 4096 to be transferred on payment of 10s. per share, and of this amount 5s. per share, or £750, will form a working fund. The lease is obtained and paid for, and the water-wheel, pumps, and other materials are also paid for; there is no liability whatever to the present time, therefore the whole of the £750 will be available for future working. As the 3000 shares will represent three-fourths of the whole, it is agreed that the shareholders taking them shall appoint the purser, captain, and other officers at their first meeting. I shall be glad to receive early application for any shares you may wish to take, accompanied with a cheque for 10s. per share. In case the whole of the 3000 shares are not subscribed for, the amount paid on shares taken will be returned in full, without any deduction whatever for commission or other expenses. As a meeting is intended in about three weeks from the date hereof, an early application would oblige.

J. O. HARRIS.

**THE NORTH HAFOD SILVER-LEAD MINING COMPANY (LIMITED).**

Incorporated in virtue of the 19th and 20th Vic., c. 47, and 20th and 21st Vic., c. 14. Capital £12,000, in 6000 shares of £2 each. Deposit, 10s. per share.

And the balance, if required, to be paid by instalments of 5s. each, at intervals of not less than three months.

SECRETARY.—Mr. Thomas Sparge.

CONSULTING ENGINEER.—Capt. Matthew Francis.

OFFICES.—224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON.

The North Hafof Silver-Lead Mining Company has been formed for the purchase and development of a rich and productive silver-lead mine, situated two miles from Devil's Bridge, thirteen miles to the east of Abergavenny, and about a mile from the projected Manchester and Milford Haven Railway.

The grant upon which the company is founded embraces an extensive tract of ground, subject to the very moderate royalty of 1-20th.

The North Hafof Mines are immediately adjoining to, and surrounded by, some of the richest and best paying mines in the district, Cwmystwyth, Frongoch, and Nant-y-Cresan. Frongoch is now giving profits to the extent of £1000 per month, Cwmystwyth of £600 per month, and Nant-y-Cresan £1800 per month.

The county of Cardigan has for several centuries been distinguished as one of the richest lead-producing districts in the kingdom, and second only to the celebrated Attleboro, Wensleydale, and Derwent Mines, in the counties of Northumberland and Durham.

A benevolent Providence has been prodigal in the bestowment of mineral treasures upon this favoured country (Cardigan), and they have been successfully wrought for centuries. Numerous large fortunes have been realised by the adventurers in its mines; and a distinguished instance is established in the case of the celebrated Sir Hugh Myddleton, who derived £2000 per month from one of them, with which he prosecuted his great work—the formation of the New River from Ware to Islington, to supply the inhabitants of the metropolis with pure water.

The North Hafof Mine is situated upon the great Frongoch lode, a vein of 33 ft. in width, containing courses of lead ore of excellent quality, nearly solid for an immense length, and from 9 to 10 ft. in thickness, the masses of ore lying in gossans or divisions of congeneric strata.

Large courses of ore are opened upon close to the boundary of the company's grant, and it is intended to adopt the most efficient and economical method of opening the lodes, by driving a cross-cut to intersect them at a low level, where immense deposits of ore are known to exist.

The necessity for the construction of a steam-engine, and the heavy expenses attendant upon working one, will be averted by the adoption of water-power, which is immediately available to an unusual extent.

And it is confidently expected by the most competent authorities that the realised profit, upon an outlay of £3000 of the capital the promoters have provided for, will enable the company to pay a liberal dividend to its shareholders; whilst intersecting the lodes at various points, by cross-cut adits, will guarantee the certainty of producing immense profits to the shareholders.

The important position of the North Hafof Mines, and the intrinsic value of the various lodes which run the extreme length of the sett, will be fully appreciated upon a perusal of the report of the consulting engineer of the company, Capt. Matthew Francis, which accompanies this prospectus.

The advance of modern science, and the progress of enlightenment, are now introducing the railway system towards and amongst the Cardiganshire mountains, where their rich silver-lead mines abound, and in a brief time those fastnesses will participate in the facilities of transport afforded to the more favoured districts of England, when the nature of the mining property of this singularly favoured province (Cardigan) will be largely enhanced.

The mining operations of the company will be under, and subject to, the immediate supervision of the eminent engineer, Capt. Matthew Francis, to whose report reference has been made.

The promoters of the undertaking, fully impressed with the great value of the North Hafof Mine, and the profitable results which must accrue from its efficient working, offer the remaining shares to the public, with a conviction that such an opportunity for the investment of capital is rarely presented for consideration.

The capital of the company is to be £12,000, divided into 6000 shares of £2 each, wherein 10s. per share is to be paid at the time of subscribing, and the remainder, or balance of £1 10s. per share, to be called for by instalments of 5s. per share each, at intervals of three months, of all which calls 21 days' clear notice is to be given.

The undertaking is to be under the immediate direction of a board of directors, to consist of not less than three or more than seven members, each of whom shall be required to qualify for office by subscribing for, and holding, 50 shares at the least in the capital of the company.

The company to be incorporated under the 19th and 20th Vic., cap. 47, and 20th and 21st Vic., cap. 14, to limit the liability of the shareholders to the amount of their respective subscriptions to the capital thereof; and the Articles of Association to define the system of management under which the company is to be conducted, and to contain provisions to secure and maintain a true and proper system of check and counter-check in its financial transactions, and in the issue and transfer of shares; and to secure power to the board of directors to commence the operations of the company, and to carry out and conduct the business thereof before the whole of the capital be subscribed, and when in its discretion it shall deem expedient.

Prospectuses, with plans and sections of the property, can be had on application to the secretary.

REPORT ON WEST BODCALL MINE.

April 15, 1861.—The Bodcall Mine is situated two miles to the east of Devil's Bridge, in Cardiganshire, and about 13 miles to the east of Abergavenny, and about a mile from the projected Manchester and Milford Haven Railway. The lode is a very fine gossan lode, presenting occasionally stones of lead embedded in the gossan, close to the surface. It is the same lode as that of the great Frongoch, and runs 50° of magnetic east, which in that mine is 33 ft. wide, containing courses of nearly solid ore from 9 to 10 ft. in width. The Bodcall Mine is situated just in the centre of the three dividend-paying mines of Frongoch, Nant-y-Cresan, and Cwmystwyth. Frongoch is giving profits to the extent of £1000 per month; Cwmystwyth of £600 per month, and Nant-y-Cresan of £1800 per annum. An adit level has been driven eastward upon the lode in the old Bodcall Mine, on the Crown property, which has yielded a large quantity of lead, and shows ore close to the boundary. I have no doubt when the lode is opened in depth, which it can be, to either cross adits or adits along the vein, that very large bodies of ore will be discovered; in fact, it is all but demonstrated that the good course of ore discovered close to the boundary will be found at a little lower level to exist in this grant, as this is the usual inclination or dip of the bodies of ore in this part of the country. I have had considerable experience of these mines, so much so that £7500 invested under my superintendence in the immediate neighbourhood, within the last 27 years, produces a profit this year of upwards of £40,000. The trials in this country or district are very light as to the expenditure, the work is moderate hardness, averaging for levels about £6 per fm., and the water contained in it may be usually drained by means of 6-in. pitwork, and generally the ore is found by adit level, mining at a small comparative outlay. At Goginan, the small sum of £500 laid out under my directions laid open £216,000 worth of ore in the back of the adit, which made a profit of £60,000; and at Loglas, for even smaller expenditure, a discovery of lead was made in back of the adit which yielded £180,000 in ore money, and £30,000 in profit from above the adit. These facts speak more of the nature and character of the lodes of this part of Cardiganshire and their produce than any speculative arguments would do. They testify to their value and the great fortune to be made by scientifically exploring them. I will add, as to the permanency of the mines of this district, that the Llaisbarn Mines, which adjoin this property, were opened under my practical agency, 27 years ago, with a working capital of £2500, I then holding myself an interest in them, which I have since disposed of, but I understand from good authority that the profits will not be less than £10,000, or 400 per cent, upon the working capital. If it were necessary, I could multiply evidence of the riches of the veins of this district, but I think what I have stated is sufficient to give a fair notion of the general yield of the lodes. Geologically speaking, the veins are embedded in the most ancient of the slates, called the Cambrian series of measures; and they extend to a depth of upwards of 3000 fms., and are scarcely in any instance yet brought as low as the level of the sea. The Bodcall sett is on the western side of the great ridge of hills extending from Snowdon to the peaks of Brecon, called the Snowdonian range; at this point the elevation is about 1500 ft. above the sea level, and affords excellent facilities for adit level mining and water-power. The River Mynach is capable of being diverted to the most feasible sites for the mouths of the levels of mine, and the reduction of the ores and the drainage under such arrangements as may be easily made, will call almost nothing in comparison with the outlay, when these expensive operations have to be effected by steam-power. Nothing can be more favourable than the tenure of the ground, which is by a lease from Mr. Chambers, of Haford, for a royalty of 1-20th of the produce of the ore, and for a term of 40 years. And, in conclusion, I do not know that it is possible to find a piece of ground possessing so many points of interest, such good prospects, and held so favourably any where besides, and I advise you to lose no time in laying the lode open, by means of facilities at your disposal; and I have no doubt but that you will soon find yourselves possessed of a very good mine at Bodcall, for a comparatively trifling outlay.

To Thomas Sparge, Esq.

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I have written much, and contended for a long time past, that our public companies of all kinds ought to be subject to public audit.—W. F. SPACKMAN.

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The high price of labour has somewhat stayed the progress of colliery operations. The whole area of this great Australian coal field can not be less than 16,000 square miles; much of this is situated at too great a depth for profitable working, but at Newcastle, and on the banks of the Hunter River, it crops out to the surface in seams of from 4 to 10 feet in thickness. The Rev. W. B. CLARKE, a geologist of repute, states that from his own surveys and actual knowledge, as compared with its gold fields, the carboniferous portion of New South Wales is of infinitely greater value. It has been said of North America that "no part of the known world offers so great a development of carboniferous rocks;" but Australia presents a close parallel with that rich coal-bearing region, and there are enormous areas of tens of thousands of square miles occupied by these carboniferous ore beds in New South Wales and Queen's Land. Several workable and valuable coal seams exist on the Bremer and Brisbane Rivers, and along the shores of Moreton Bay. On the Brisbane River steamers can load by lying literally at the mouth of the mines, as is the case at Lake Macquarie; this phenomenon is characteristic of the coal of New South Wales. In the colony of Victoria veins of coal of superior description have been found in many localities—Western Port, Gipps Land, Moonlighthead Coast, and other places. There is also a field extending from the Barrabool Hills to Cape Otway, which presents many characteristics similar to that of Western Port. In both those fields the only seams of coal of workable thickness have been found on the sea-shore between low and high-water mark. The place where the coal crops out, on the Cape Otway shore, is within four miles of Loutit Bay; and in this respect of proximity of harbour has the advantage over the Western Port field. Coal has also been discovered at Cape Patterson, about 150 miles from Melbourne, on the south-east coast. A good workable coal field would be of the greatest importance to Victoria for the operations of its railways, factories, and steam-vessels. In South Australia the geological formation at Mount Gambier holds out the promise that coal might be found in abundance in that district by means of the needful appliances properly directed. Coal is reported to exist in considerable quantities at King George's Sound, Western Australia; it is said to cover a space of 30 miles, and to commence at Doubtful Island Bay, close to the sea shore. There is also a good coal stratum on the Preston, near that colony. A fine field exists in the north at 28° 57' south latitude, and 113° 30' east longitude. The mine is 45 miles from Champion Bay, 42 miles from the mouth of the Irwin, and about 200 miles north of Perth.

The whole island of Tasmania is interspersed with coal formations, either bituminous or anthracitic, and labour alone is required to secure good and cheap fuel. Mining operations have been carried on in the island on a small scale. It requires something more than a mere acquaintance with the mechanical processes of mining in pits that have long been worked, to open new seams, and direct the necessary operations for extracting the mineral without waste or injury, so as to send it to a profitable market. The demand for coal that now exists in Australia, and is likely to grow every year, is far in excess of the requirements of the colonies prior to that accession of population and expansion of commerce in all its branches which was occasioned by the gold discoveries. The timber supply hitherto depended on for fuel in all the great centres of population is partially exhausted, and we have already shown the extensive use that has sprung up of steam-power in machinery and locomotion both on land and sea.

"No reasonable doubt can be entertained," writes Dr. MILLIGAN (who, by the way, is now in England), in his very elaborate Report on the Coal Fields of the East Coast of Tasmania, "that for all practical purposes of the present day, an inexhaustible supply of good coal exists at Mount Nicholas and Fingal. Whether it may be profitable to send it to market, or practicable to consume it productively on the spot, is for capitalists and speculators to consider, and probably for unforeseen circumstances at length to decide." These words were written in the year 1848. At that time Melbourne was a small village, and the River Yarra and Hobson's Bay frequented only by a few ships, taking home their annual cargoes of tallow and wool, the early, and for many years the only, staples of the district of Port Phillip, now become the important colony of Victoria. The gold fields were undreamt of; the interior of the country unoccupied, except by sheep runs; and the River Murray and its tributaries unexplored, while they are now traversed by steam-boats. At that time railroads were unknown in Australia; steam-machinery had no place, save in the shape of an occasional flour-mill and none of the great ocean steamers, which now serve the uses of a developed commerce, had visited the Australian waters.

It seems, therefore, an opportune time to call attention more prominently to the vast deposits of coal that are lying unused in many of the southern colonies, to stimulate further examination and to throw together a few notes with respect to existing information and enquiry on the subject. Dr. MILLIGAN, whose report gives proof of a very careful survey and inspection of what he terms "the magnificent coal seams of the east coast," says they extend over a large area. Of the quality of this coal, he states in general terms that "it is first-rate, and will be found equal to any or all of the purposes to which the best English coal is applied." He says, again, "the coal is of the finest quality, of a deep black colour, with a rich, bright, and splendid lustre, like that of resin or jet. It is easily frangible, and ignites readily, burning in the mass with a wild ruddy flame, and a strong glare." In the immediate vicinity of Fingal lies the Steiglitz coal field, at a very practicable distance from the two shipping places of George's Bay and Falmouth. Steiglitz main seam, in the Mount Nicholas range, which is 12 feet in thickness, is a distance of 12 miles from the sea by a road already made.

The island of Tasmania resembles Wales in the character and position of its coal, which is anthracite in the southern part of both countries. Extending northerly, it gradually loses that character, by becoming semi-bituminous. It is, however, important for colonial interests that the use and value of anthracite coal should be properly made known. Mr. TAYLOR, in his "Statistics of Coal," states "that the researches of scientific men have proved that anthracite coal was formerly bituminous, having been deprived of volatile matter by the action of internal heat; leaving a greater amount of carbon, the excess of which stamps the value of coal for general purposes, except in the manufacture of gas;" and he adds that in the smelting of ores anthracite is preferred to bituminous coal, which cannot be used in the furnace in a crude state, but must first be converted into coral. Anthracite coal is obtained on Schonter Island, on the coast, where vessels may anchor within 200 ft. of the coal pit. The seam is from 6 to 7 in. thick, and consists of layers of anthracite, of a porous and coke-like character, with small layers in succession of bituminous coal. The miners state that they could afford to deliver it at the water's edge for 4s. or 5s. per ton. At South Cape a seam from 18 to 20 in. thick is found, but not worked. The coal is highly carbonaceous, but largely mixed with iron pyrites. At Richmond it crops out on the west bank of the Coal River, about one mile from a point on the estuary where vessels of 20 tons may load. The seams vary from 2 to 2½ ft. in thickness. At Newtown, within two miles of Hobart Town, the capital, anthracitic coal is obtained in six shafts, at depths varying from 35 to 80 feet, and the supply sent into town is considerable. It sells from 25s. to 27s. per ton. At Tasman's Peninsula, known in market as Port Arthur coal, it has been worked largely for nearly 30 years, and, though a coarse anthracite coal, it throws out great heat, and is much valued for furnaces. It sells from 30s. to 35s. per ton. Bituminous coal is found at Douglas River, on the north-east coast, about four miles from the sea. Some of the seams are 8 ft. thick, and so close do they often run to the surface that in a 50-ft. shaft six seams of coal were cut. A seam of 20 in. has been worked for the Hobart Town market, where the coal is sold at 30s. to 27s. per ton. In the interior this coal crops out in the bed of the Ouse River, where the seam is 4 ft. thick, under a 4-ft. bed of pipe-clay. Bituminous coal is also obtained in the North, at the Mersey, on Port Frederic, the seams being from 2 to 3 ft. thick. On the River Don, in the same neighbourhood, it crops out of the earth in many places from 26 to 30 in. thick, and this coal is stated by Mr. SELWYN to be the best in the island. In two places where shafts have been sunk 27-in. seams have been found less than 20 ft. from the surface. For many of these particulars we are indebted to the official colonial reports of Dr. MILLIGAN and Mr. SELWYN, both eminent geologists.

An extensive bed of shale has been found at the great bend of the River Mersey, near La Trobe, which is estimated to cover 490 acres, and to have a depth of from 18 to 20 ft., equal to a quantity of 20,000,000 tons. Making, however, a liberal allowance for waste, and for walls to support the ground in mining, it is calculated that at least 10,000,000 tons might be quarried and mined with ease. This shale is found close to the surface. Where it has been exposed to the atmosphere it is of a light brown colour, but taken from a greater depth it is of the colour of dark grey; and a small piece of it held in the flame of a candle lights easily, and burns brilliantly. The extraction of oil from shales and coal has been largely extended of late years, not only in the United Kingdom, but in France, Germany, and the United States. The demand for lubricating use on railways, and in machinery, and for many manufacturing processes, is constantly increasing. Its great recommendation consists in the fact that it remains liquid and

pure after exposure to the atmosphere, and never thickens or clogs on the machinery, as ordinary oils do. The manufacture of this oil is not attended with any difficulty that would prevent its becoming a colonial industry. The process is very simple; at least, as much so as the manufacture of gas.

In New Zealand much enterprise has lately been displayed in coal mining, a matter of some importance now that there are so many coasting steamers, intercolonial steam-vessels running to Sydney and Melbourne, and that a Pacific line is projected thence to Panama by the Otago Government. At the Motupipi coal field the fuel improves as the seam is worked; the coal is rather sulphurous, and burns rapidly, leaving a good deal of ash, but does well for steamers, if mixed with an equal quantity of English coal. At Pakawau coasters can load coal, but vessels above 200 tons have to load in the offing, or at the Pata Islands.

The preliminary step to all manufacturing enterprise is the development of the coal beds where they exist. The furnace and the steam-engine are the great industrial forces of the age; and to these coal is the staff of life. That many of our principal colonies possess this substance in abundance should satisfy them more than if they had great gold fields. With it, they can create gold by direct exchange, and by manufacture. Both by exporting the produce of their mines, and by using it in the creative processes of manufacture, they have it within their power to make a vast addition to their public wealth, and greatly augment their capability of supporting an industrial population. The collection of samples of foreign coal may be made one of the most interesting in the Exhibition, having regard to its important uses. Full details with respect to the seams, accompanied by maps and geological sections and reports, statistics of production, existing facilities for land transport or shipment, and authentic analyses, would render the collection a medium of reference of the highest interest. Especially should samples of all varieties from different localities be placed side by side for comparison, independent of the special colonial collection of objects of which they would form a part.

We have confined our observations here to the coal deposits of our southern colonies, but will direct attention hereafter to those important coal fields we possess in the western world.

#### NEW THEORY ON THE COMPOSITION OF STEEL.

The labours of M. Fremy on the composition of steel continue to attract the attention of the learned business portion of the public, although it is now admitted that the results of these labours are not altogether new. Messrs. Christopher Binks, McIntosh, C. Sanderson, and latterly Messrs. Ruolz and Fontenay, have each presented the question in the same light. Amongst the communications addressed to the Academy of Sciences in Paris, at its sitting on April 1, and which were presented by their authors as antagonistic to the theory of M. Fremy, must be specially noticed those of M. E. Jullien and Captain Caron. In 1852 M. E. Jullien, an engineer of great ability, and known as the author of one of the best works published in France on the steam-engine, presented to the Academy several papers on the composition of steels. M. E. Jullien is a partisan of the old system, that steel is a simple carburet of iron; but he regards it in an entirely new light, and gives it an eminently scientific bearing. He says steel does not consist of a pure and simple combination of carbon and iron, but in a dissolving of the carbon in the metal. Under the title of "New Theory of Cementation," Capt. Caron read in the sitting of April 1 a paper in which he directly combats the views of M. Fremy. M. Caron does not admit the presence of nitrogen in steels. He seems to have taken for the text of his work the conclusions of a German chemist—M. Marchand—who terminates an article inserted in the *Journal für praktische Chemie*, in 1850. If there is nitrogen in steel it belongs necessarily to the substances mixed with the iron, which no more form an integral part of the metal than does the scoriae which one finds mixed with it. So decided an assertion will appear difficult to sustain in presence of the recently-discovered facts of M. Fremy, which obliges every description of steel to throw off ammonia when treated with a current of hydrogen gas. Is not this sufficient evidence to prove the presence of nitrogen in steel? Indeed, one is much surprised to find M. Caron contest the existence of nitrogen in this metallic product, when it is known that the particular process he himself extols for the production of steel consists in the use of cyanides, and even of the cyanohydrate of ammonia—substances peculiarly nitrogenic—M. Caron, who makes steel by means of cyanides, does not admit that nitrogen exists in steel, believing that the cyanides lose their nitrogen at high temperatures. M. Caron adds that carbonic-hydrogen makes better steel than the cyanides. But has he not made white iron and not steel by these means; and even if he did produce a little steel by these means, was it not because the iron contained a portion of nitrogen? Finally, the labours of M. Caron, which have exercised a useful influence on the studies of which steel is the object, and which show the part nitrogen acts in steel making by the employment of the cyanides in the cementation of iron, becomes incomprehensible from the moment the author denies the presence of nitrogen in steel.

To the various observations adverse to his theory M. Fremy has given the best of all answers, in following up and producing new experiments, which, in themselves, reply to the prescribed objections opposed to his ideas, and throw new light on other sides of this question. M. Fremy has proved that steel cannot be made without nitrogen, and that all manufacturers make use of the cyanide of iron without knowing it; he has even proved that the degree of steel is proportional to the quantity of nitrogen given to the iron. In the sitting of the Academy of Sciences of April 1, which was almost entirely occupied in the discussion of this great question, M. Fremy read a new paper, in which he proved that steel is destroyed by being deprived of its nitrogen. He produced before the members of the Academy a blade of cast-steel, of which one portion only had been submitted to a current of hydrogen gas, the metal being kept at a red heat. The operation lasted three hours, and during all this time the steel disengaged ammonical vapours continuously, and probably other nitrogenic alkalies, whose vapours smell like burnt horns. The part of the blade which had undergone the influence of the hydrogen, and lost its nitrogen, became entirely transformed into iron, endowed with an extraordinary malleability, exceedingly soft, and not to be altered by tempering, whilst the part of the blade which had not been denitrogenised preserved all the character of steel. Against the theory of the presence of nitrogen in steel has been raised the very serious objection that the greater portion of the steel used in the arts is manufactured by a process which seems to exclude all possible intervention of any substance of which nitrogen is a component part. The conversion of iron into steel takes place in cementing ovens, where the process is confined to heating bars of iron in the midst of a mass of pulverised charcoal. M. Fremy has taken every care to answer this objection. According to him, and as already advanced by English authorities, the air circulates continually in these cementing ovens, and the nitrogen of the air is absorbed by the metal during its passages through this mass of fuel. M. Fremy, however, produces the more conclusive fact that charcoal produced from organic matter, as used for the cementing ovens, always retains nitrogen. He submitted to a current of hydrogen gas charcoal produced from organic matter nitrogenised, and whilst under the influence of the hydrogen this coal, for a long time, disengaged ammonia. This experiment proves that organic substances nitrogenised, as those which constitute the animal and even vegetable tissues, leave by calcination a nitrogenised charcoal, which afterwards, by slow combustion, similar to that which takes place in cementing ovens, disengages their nitrogen in the shape of ammonia, under the influence of hydrogen gas, or the vapour of water. Thus, according to M. Fremy, the nitrogen useful in the manufacture of steel would be furnished from the air, and from the charcoal itself, which is always nitrogenised.

We shall, no doubt, have occasion to recur to this subject, for there is scarcely a more important question in any branch of the great manufactures.

**MANUFACTURE OF CAST-STEEL.**—An invention, the essential feature of which consists in melting in pots or crucibles blister-steel, bar-steel, or scrap-steel, or any mixture of these, with ores of titanium, containing besides titanic acid a large proportion of oxide of iron, such, for example, as iserine and limenite (the titanium ores being first deoxidised previously to being mixed with the steel), has been patented by Mr. E. Musket, of Coleford. He prefers to use as most convenient the Taranaki iron-sand from New Zealand. In preparing this iserine for his process, he mixes the said iron-sand with from one-fifth part of its weight to one-fourth part of its weight of dry and finely pulverised carbonaceous matter, such, for instance, as powdered charcoal, and he introduces the mixture thus prepared into a cementing chamber or converting furnace, such as is ordinarily used by steel manufacturers for converting bar-iron into blister-steel; or he places the ore in alternating layers with charcoal in the said cementing chamber. In either case the cementing chamber is then closed, so as to prevent access of air, and raised to a white heat, at which temperature it is maintained until the deoxidisation of the iserine is effected, which will be in the course of from about 72 to 96 hours, according to the size of the cementing or converting chamber or furnace. The deoxidised iserine is used either alone or mixed with carbonaceous matter. When the titanium ores are in lumps, he deoxidises them in a converting furnace or chamber, in order to prepare them for his process, in the fol-

lowing manner:—He covers the bottom of the cementing or converting retort or chamber with a layer of coarsely pulverised charcoal. Upon this he places a layer of iserine or limenite lumps, and upon that a second layer of charcoal and lumps of iserine or limenite. He then proceeds to deoxidise the said iserine or limenite as when operating upon the New Zealand iserine or iron-sand. The proportion of deoxidised iserine or limenite to be added to the steel which it is intended to melt may be varied at pleasure, but he has found that 40 lbs. of blister-steel, bar-steel, or scrap-steel, and 3 lbs. of deoxidised iserine or limenite melted together afford an excellent result. Should the resulting cast-steel prove too soft, it may be made harder by adding with the deoxidised iserine or limenite from 1 oz. to 4 ozs. of charcoal or other carbonaceous matter to every 40 lbs. of steel to be melted, but he does not confine himself to these proportions. In practice he finds it answer well to mix the deoxidised iserine or limenite when pulverised with melted pitch or resin, and he introduces the compound into the steel to be melted. The pitch is melted with the pulverised deoxidised iserine, and the compound emptied on a cold slab and broken up for use. Manganese and other fluxes may be added, but they are not essential to the success of the invention.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

APRIL 25.—The Coal and Iron Trades have not undergone any noticeable change since we last wrote; both are tolerably brisk, with a good prospect. Freights have risen considerably lately; they are now quoted from the Tyne to London 7s. per ton, and to the Mediterranean, &c., 17s. to 22s. per keel.

At the meeting of the Northern Institute of Mining Engineers, held in Newcastle, on Thursday last, Mr. Nicholas Wood, the President, occupied the chair. Two new members were proposed. A committee was appointed to confer with the committee of the Literary and Philosophical Society of Newcastle on the subject of providing accommodation jointly for the reception of fossil specimens. It will be recollect that some time ago the Northern Institute purchased the fossil specimens first collected and arranged in connection with the Fossil Flora of Lindley and Hutton, and hitherto this collection has not been removed. It is now proposed to arrange it in connection with the Museum of the Philosophical Society, at the joint expense of the two societies, additional accommodation to be provided for that purpose. The next business was the discussion of the paper of Mr. Watson "On Cement Walling;" some additional particulars were communicated by him, and also by Mr. Johnson, of Gateshead, the manufacturer of this cement. Small blocks, composed of the cement, were exhibited by these gentlemen, and details given of experiments made by them for the purpose of testing the capability of resisting pressure, and also of bearing exposure to corrosive liquids, including sulphuric acid, the most corrosive substance likely to be met with in hot upcast shafts. The most general opinion entertained of this cement appears to be that it may be adopted with success instead of freestone walling, &c. This, indeed, appears almost a certainty, as the former substance is impermeable to water, while the latter is well known to be very porous. But its adoption in lieu of metal tubing is quite another, and more serious, question. As we have before remarked, an actual trial will alone settle this point, and it appears to deserve a trial. Mr. Watson stated that a cubic inch of the substance would sustain a pressure of 2000 lbs.; there is, therefore, no doubt of its bearing any pressure likely to be brought against it in shafts. The only difficulty appears to be the securing of the blocks together so as to form one compact mass, and in making the top and bottom of walling perfectly tight.

Another very important subject discussed was that of "Underground Ventilating Furnaces;" the papers of Mr. Armstrong and Mr. Daglish forming the groundwork for this discussion. Various opinions are entertained as to the best form and position of a furnace. Examples are given in the papers of a great variety of furnaces. They may, however, be divided into three classes:—First, those furnaces fed with return air, and worked by an open grate—that is, with a free air-way over the grate of a certain area. By far the larger portion of ventilating furnaces are upon this principle, and this particular furnace will no doubt bear the test of experience, both as regards maximum effect and economy of fuel. The size, however, of any particular furnace or furnaces can only be determined by the actual requirements of the case. The size of the shafts, area of air-ways, and extent of workings, all being important elements in the question. We quote here a passage in the able paper of Mr. Daglish, which appears to give some of the main points of the question in a few words.—"By having a large surface of fire-grate, and using a thin fire, thus reducing the resistance, and by allowing such a quantity of air to pass over the fire as is just sufficient thoroughly to saturate the resultant gases with oxygen, and cause perfect combustion, without reducing the temperature, the maximum effect will be produced." A very remarkable example is given of a furnace at Eppleton Colliery, which is stated to have given very satisfactory results. It is 26 feet long by 6 feet wide (156 square feet). It is placed with its short side to the air passage, so that "all the air which passes over the fire passes along the entire length of 26 feet, thus supplying the oxygen necessary for the consumption of the gases at an elevated temperature, and, consequently, preventing the formation of smoke." The advantages offered by this form of furnace are,—1. Economy of construction.—2. Elasticity of action; one, two, or more fires can be in operation together.—3. Continuance of action; there being no check when clearing, as in ordinary furnaces, this being always in operation by moving the fire from one end.—4. Consumption of smoke.—5. Absence of radiated heat, and coolness of passages near the furnace.

Second, a furnace fed as above with the return air, but with closed doors in front, and the air forced through the fire. By this form of furnace the temperature is raised much higher than in the ordinary furnace, and a larger portion of oxygen is supplied in a given time. But, at the same time, the contraction greatly increases the drag of the mine, and a much larger quantity of fuel is consumed, so that in an economical point of view this furnace is highly objectionable. It is evident, on a very slight examination of this furnace, that it is framed in direct opposition to the first principles of ventilation, "as the resistance of air is in direct proportion to the length and area of air-passages," and also as the square of the velocity."

Third, a furnace fed with fresh air from the down cast-shaft, the return air being carried into the upcast by another channel. This method is only pursued where the return air is in such a state that it would be unsafe to take it over a furnace. It may, therefore, be regarded as a method adopted only in extreme cases, and not to possess many recommendations to notice; certainly not at all likely to be brought into general use. The same objections apply to this as have been noticed in the last case, with this addition, that the air taken to feed the furnace is abstracted from the main intake. We can only give a slight indication here of the contents of these papers. Those who are interested in the subject we may refer to the papers as published in the Transactions of the Institute: they will well repay the trouble of perusal. [They can be had from the *Mining Journal* office, as published.] The paper of the president on the "Hutton Explosion" was also discussed; but no new facts were elicited, and its discussion was again adjourned until a future meeting.

#### REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

APRIL 24.—The general tendency of the Iron Trade is, on the whole, more favourable in many respects than it has been for several weeks past. The position of political affairs is more peaceful, and the manufacturing districts of Lancashire, after suffering from the effects of strikes for several weeks, have now settled down to work again. The enquiry for iron for home consumption is on the increase, and there is a greater disposition to purchase evinced by the merchants for speculation. The latest advices from America are more hopeful, and the impracticability of the Morrill Tariff Bill is being made more manifest daily.

The Coal Trade is not so active as was anticipated, but its position generally is satisfactory, and will no doubt improve, as the strike in the Lancashire district has happily terminated. The Yorkshire coalmasters are very sanguine in getting a parliamentary power to enable them to construct the new intended mineral railway. It would give a great impetus to the export trade in coal to the Continent. The great difficulty experienced with regard to the mineral traffic, both in the Yorkshire as well as the Derbyshire district, is the great want of mineral wagons for the transit of the materials, and so rapid has been the increase in traffic that the companies have found it impossible to keep pace with the augmented requirements of the trade.

The strike of the ironstone miners in Chesterfield and the neighbourhood has terminated, and the whole of the men have returned to work, having been out one week. The ironmasters have gained the object which they have sought, of increasing the daily hours of labour to 59 hours per week. The great wish of the men was not to remain longer in the pits in the evening, and in preference to doing that they have agreed to curtail the hours agreed for meals one-half, so that now half an hour is allowed for dinner instead of an hour. We are assured by an ironmaster who has taken a prominent position in the dispute, that it was not the intention of the masters to reduce wages, or to require the men to do extra work without extra pay. The men were complaining that they could not earn a livelihood at the present rate of working, and the masters, with a view to benefit the men as well as themselves, determined to increase the number

out on strike were so favourably impressed with the statements of the delegates at the late public meeting that they resolved upon forming, and now have established, a Miners' Union, which it is intended to amalgamate with the Barnsley District Union. Judging from the feeling which pervades the great bulk of the men, we have little faith in the security of peace amongst the men under the new system. Hitherto the relations between the workmen and their masters have been so amicable that the necessity for the formation of a Miners' Union, though frequently talked about, was never actually forced upon them, so that on the occasion of the late strike the men found themselves out of work, and without any organisation necessary to render them substantial aid. On a future occasion they intend to be better prepared.

We have no material alteration to notice in the lead mining operations of the Peak of Derbyshire. The present dry season is very favourable for work, and the miners are taking due advantage of it. The new branch railway from Rowsley to Buxton, to connect the line of communication between London and Manchester, is making rapid progress, the Midland Company being anxious to open the line for traffic without the least delay. The importance of this railway to all engaged in mining cannot be overestimated, and we hear of several large works about to be commenced in close proximity to the line, so that in a short time the mineral riches of the Peak will have the means of exit to the markets of the kingdom.

The local share markets have been very flat during the week, and there has been little business done, owing to the general depression in trade.

The Sheffield trades are suffering severely, and a greater period of dullness and inactivity was never known in the hardware and cutlery trades. The iron and steel manufacturers are enjoying an active business at the present time, from the fact that they have in hand large Government contracts which will require some time to execute, besides an improved continental demand.

The machinists of Lancashire generally, and also in Leeds, are exceedingly busy, and in many cases the men are employed until late hours daily to keep pace with the largeness of the orders on hand, which are chiefly for shipment.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

APRIL 25.—There is nothing new in the aspect of trade. The demand for iron keeps quiet, and prices are low. The unfavourable American news has a depressing tendency. There are somewhat more enquiries, but purchasers are disinclined to give prices which make orders worth looking after. In the remarks made last week as to the limited extent to which the means of producing iron are now taxed an inaccuracy occurs. It was intended to be stated that the means of production are not being tasked probably to two-thirds, or much more than one-half, their capability, instead of "one-third," &c., as written.

Strikes against proposed reductions of wages prevail in North Staffordshire, and the remnants of the hostile feelings engendered by the shameful practice of cutting the bellows of those who do not conform to the dictates of the Union. It is perfectly appalling to contemplate the loss that the community incurs by strikes, for they are, amongst one class of workmen or another, constantly existing in every manufacturing district. It is worthy of note that in the Staffordshire Potteries the men employed in the Porcelain Works are hired for a year, at certain rates, and a strike amongst them is extremely rare. There is much to be said in favour of employers recognising the trade organisations of the men, and freely communicating with them in case of any proposed reduction or advance of wages; but in most trades if the superior men, of steady habits, and possessed of superior skill as workmen, were to be engaged for a protracted period, it would tend to a more amicable settlement of terms, and would have the advantage of distinguishing a superior class of workmen, and incite others to gain admission into this class.

The Special Rules for the mines of this district under the new Act have not yet reached the last stage prior to their adoption. The new bill involves stricter provisions for the regulation of mining operations, and hence there is somewhat more difficulty in obtaining general assent to rules which must involve considerable expense in many cases.

#### BLASTING BY ELECTRICITY.

To effect the dislodgment of masses of rock by gunpowder explosions, charges of gunpowder have been, for centuries past, buried within the mass and ignited; but long before any electrical resources were sought for this purpose the ignition had been accomplished by a slowly-burning train. Subsequent to the discovery of electricity this agent has been pressed into service, and by the aid of very rough electrical expedients engineers have long been able to ignite one gunpowder charge at a time; but the desideratum remained of igniting many gunpowder charges simultaneously. Such was the problem to which Professor Wheatstone and Mr. Abel recently turned their attention, and in which they have been successful. In the course of their experiments they tried the description of apparatus which has long been exhibited at the Polytechnic; but, notwithstanding the stupendous effects produced in the lecture-room, it did not answer in the field; they then tried galvanoelectricity intensified by transmission through a Ruhmkorff's coil, but this did not quite answer their expectations. Finally, they tried magneto-electricity, and this was found to be the most satisfactory of the whole series. As a fuse they adopted, in the first instance, the "Stratham fuse," which may be said to consist of a broken circuit, intervening between the ends of two copper wires enveloped in gutta-percha, the intervening space being filled with sulphide of copper. It is very delicate, but Messrs. Wheatstone and Abel required a fuse of still greater delicacy, and in the end discovered that the Abel fuse may be shortly stated to be a Statham fuse, wherein sulphide of copper takes the place of sulphide of copper, and apparently leaves little to be desired.

**IMPROVED BLASTING-CARTRIDGES.**—The frequent recurrence of accidents from blasting with naked powder induces us again to refer to the very valuable invention of Capt. J. Webb, of St. Austell. After many years' study to ascertain the best mode and material, Capt. Webb declares that he has attained complete success. He states that instead of the ordinary paper or cotton covers or cases, he proposes the use of cotton cloth, oiled with boiled linseed oil, or made waterproof with India-rubber, gutta-percha, or other suitable material, and makes a cylindrical case open only at one end; the gunpowder is then filled in, and the open end tied tight around the fuse. Between the tampon and the charge he introduced a loose woolen material, which is most conveniently done by binding it round the fuse immediately adjoining the case or cartridge. The effect of this is that in the event of the charge not igniting immediately, the fuse does not smoulder, but is smothered and extinguished, so that no accident can occur. The patent, he continues, has been adopted in many mines, and the invention is much prized by the men and mine agents as being perfectly safe and economical; but there is still existing a great lack of attention or want of consideration in this matter. If life and limb are not worth attention, certainly the charge of families thrown on the public should call for some reformation. At present there is quite as great a necessity for Government inspection in Cornish and Devon mines as in the coal districts. It is absolutely requisite that Government should appoint at least one Inspector in the two counties of Cornwall and Devon, for the blasting with naked powder, leaving old shafts open, &c., is really a scandal to mining, if we take into account the great loss of life resulting.

**INJURIES FROM COLLERY WORKERS.**—With respect to the cases of Hamer v. Knowles, and Stroyan v. the same, recently decided in the Court of Exchequer, the facts, from the defendant's point of view, were these—In 1833 a manufactory was erected, and in 1841 and subsequent years additional works were erected on a close. In 1842 the close, which was then under lease, was conveyed by its owner to a person who died in 1849, and whose devisees, in 1851, on the expiration of the lease, conveyed it to the plaintiff (Hamer) in fee, who, previously to 1849, had acquired possession as assignee of the lease. In 1849 and 1850, Messrs. Knowles, in winning coal from the land which was near, but not immediately adjoining, the above-mentioned close, caused its surface to subside, and thus injure the manufactory. The devisees did not sustain any actual damage, as they incurred no expense, and continued to receive their full rent, and, on the sale, obtained the full value without reference to any injury (of which they were ignorant) at that time occasioned by the mining operations. Subsequently to the conveyance to the plaintiff, the mining operations of Messrs. Knowles caused a further subsidence of the manufactory, and which subsidence continued after the termination of the works in 1852, and down to a period subsequent to August, 1855, when the present action was brought. It was admitted by the plaintiff that the mining operations were skilfully conducted, and that the weight of the manufactory did not contribute to the injury. Upon the above facts the Court of Exchequer held that Mr. Hamer was entitled to recover damages for the deterioration in value of the manufactory, the injury to its machinery, and the loss of profits, both in respect of his interest as occupier before 1851, as subsequently, and as well after the commencement of the action as before. For the last 20 years the law respecting injuries arising from colliery workings has been in a transition state, every case being more onerous for the colliery worker, and more advantageous to the surface or adjoining proprietor. The current of legal authority has at last, by the decision in the above cases, developed this principle,—that the owner of the surface or adjoining land is entitled to have the support of an adjoining coal seam, no matter how distant it may be, and that if such seam is worked, no matter how carefully, and an injury arises, the coal owner must pay. Such principle, though very simple, is one which sadly diminishes the value of mineral rights that are severed from the surface.

**SOUTH WALES.**—Our Aberdare correspondent writes as follows:—The tone and tendency of the coal trade throughout this valley continue to improve, and the fine weather, combined with an easier money market, exercise a salutary influence on manufacturing and out-of-door engagements. Indeed, so well employed are the working classes of this and neighbouring districts just now that an idle man can scarcely be met with. Notwithstanding all this there is a great cry out about the "times," and most of the neighbouring tradesmen appear to be suffering considerably from the effects of the dull state which the coal and iron trades were in a few weeks ago. There is no important change to be reported in connection with either of the principal works in this neighbourhood. A few weeks ago I made some remarks on the depressed state of the tin trade, and in doing so observed that Messrs. Booker and Co., of the Mellingriff Works, near Cardiff, had an enormous stock of packed tin on hand, and were so far at a loss for orders as to be compelled to stop making. I am now glad to be in a position to state that their extraordinary stock has been cleared, and the tin department of this extensive works is again in full operation. From over the hills reports are not more unfavourable this week than last—the coal trade being pretty brisk, and two or three of the best-managed iron-works in steady operation. During the week ending the 20th inst., the following vessels arrived from foreign parts:—*Annie Fisher*, from Caldera, with 45 tons of copper regulus, for H. Bath and Son; *James and Mary*, from Aveiro, with 340 tons of copper ore, for H. Bath and Son; *Sea Nymph*, from Antwerp, with 173 tons of zinc, for Vivian and Sons; *Cobre*, from Cobre, with 115 tons of copper ore, for the Cobre Mining Company; *Anafarad*, from Dunkirk, with 115 tons of copper coins, for Vivian and Sons. Up to the same date 45 vessels have left Swansea, with 9899 tons of coal and patent fuel. Of these the following were above 300 tons:—*Solier*, for Alexandria, with 349 tons of coal; *Ricardo Ralli*, for Corfu, with 424 tons of steam fuel; *Agitatore*, for Batoun, with 610 tons of patent coal; *Elizabeth Dawson*, for Barcelona, with 96 tons of coke, and 430 tons of Warlich's patent fuel; *Fidio*, for Varna, with 583 tons of Duffryn steam coal; *Sincero Antonio*, for Alicante, with 540 tons of heat steam coal; *Narciso*, for Disappe, with 336 tons of Bwilla steam coal; *Aurora*, for Barcelona, with 460 tons of Warlich's patent fuel; *St. Pierre*, for Alexandria, with 350 tons of Bwilla steam coal; *Centaur*, for Algiers, with 300 tons of Warlich's patent fuel.—*Seascape Herald*.

#### MINING IN NORTH WALES—No. II.

[FROM OUR CORRESPONDENT.]

The Minera district, in the limestone range, is probably the most important, though the Halkin Mountain district is fast becoming a rival. The mines that have had anything of a trial are proving a success. Rhosmor above the water level has given good profits, and holds out every prospect of greater success to the deep. Bryn Gwilog, on an outlay of 1000L in working, has turned the scale, and is already making profits, and in all probability within three months will enter the Dividend List. An important discovery was made at this mine on Monday last in the 105 yard level west; enough has not yet been seen of the lode to put a value per fathom on it, but upwards of 4 tons of lead has been broken in 4 ft. of a cross-cut, and in the bottom of the level the course of the lode would appear to be 3 ft. wide—solid. West Bryn Gwilog, Billings, and Silver Rake are promising undertakings, and we hear that Pentre Lygan, a very interesting piece of ground, is about to be reworked, but we purpose referring to all these, with the other mines working in this important field, in detail on another occasion. We have now to treat of the Minera district. The only portion of this extensive field for mining that has been worked to any extent is the northern part, not extending more than about two miles from the village of Minera. The mines in this locality have been worked by the Romans, and their history would fill a volume. The amount of profit that has been made, and the quantity of lead ore that has been raised, cannot now be accurately ascertained, but it must have exceeded that of any other in the principality. The Minera Mines are at present worked under the superintendence of Mr. J. Taylor, jun., and the local management of Mr. J. Darlington. Their last sale of ore was 500 tons for the month, which could be doubled if the management wished it. The mine is being wrought for profits, and for a lasting mine, and certainly when shut up it will not be from want of lead, but from being overpowered with water. The mine being situated in a valley at the northern extremity of the limestone range, the whole drainage of the country to the south for a couple of miles appears to find its way by means of swallow-holes to the lower ground, in a similar manner to the supply of water in the Holywell, in Flintshire. No engine being capable of contending with the water in the Minera Mine, it became necessary to drain it off by a day level, which work has been successfully done by the present company. This new day level has been brought in for an immense distance and at great cost, coming in 120 yards deep in the western part of the mine, and besides accomplishing its object in cutting off the drainage water, it has led to magnificent discoveries. The further drainage of the mine is effected by two pumping engines, one an 80-in. cylinder, and the other a 40 in. The plant is the most extensive and complete of any in the district. Some idea may be formed of the value of the course of ore in this mine when we state that Darlington's vein, now the richest in the mines, will produce in places upwards of 20 tons of lead to the fathom. This is supposed to be the old red vein, which was worked very rich further west. The adit is brought up on the main vein, and is about 80 yards to the south of Darlington's vein.

The mine is divided into 1800 shares, and selling for about 175/- per share, or about 320,000/- a large sum for a lead mine; but, considering the great resources at the command of this company, it cannot be considered dear.

On the south Minera is joined by the Park Mine, worked by a local party above the water level, and, on a small scale of working, 15,000 tons of lead, yielding a profit of 182,000/-, has been raised, and rich courses of ore, for a great length, have gone down, only requiring the erection of machinery, or the bringing up an adit from the Minera side, driving about 300 yards in at a depth of 320 yards in the eastern shaft at Park; a driving of about 300 yards would effect the object, when a splendid mine would be the result. Negotiations have for a long period been carried on between the two companies.

Park Park, to the south of Park, has produced 15,500 tons, and yielded a profit of 110,000/- above the water level. It is still worked by the Messrs. Burton, but in a most unmanly-like style. The present end is 300 yards east of the most easterly shaft, and the workings are almost exclusively on tribute. Nothing but rich mines could stand the treatment usually administered to mines in Flint and Denbigh (with some honourable exceptions). Were the mines of Cornwall worked in the same manner, Cornwall would in a few years cease to be a mining field. Pool Park lode is a parallel lode to Park and Minera, and about ½ mile south of Park. The western part of Pool Park is said to be divided from the original seat, and secured by Mr. T. P. Thomas, of North Minera, as a distinct property, called Lower Sychnant.

A company has been inaugurated under the management of the Messrs. Taylor to work the extensive grant of South Minera, which lies to the east and south of Pool Park, extending for nearly two miles in length, and one of the largest grants in the district. East of Pool Park, South Minera boundary is within 80 yards of the present end, so rich in Pool Park. Besides this lode, there are two other main parallel lodes, known as South Minera and Cefn-y-Gardin. We shall next week more particularly refer to the ground north of Minera, &c.

#### THE CARDIGANSHIRE MINING DISTRICT.

The northern part of Cardiganshire has long been celebrated for the produce of its mines, bounded on the west by the sea, and on the east by the Plynlimon range of mountains, from north to south, beginning at Tal-y-bont, and ranging for about 20 miles to Pontrhydfyndigaid; it affords lead and silver-lead ore in almost unexampled abundance. The slate is the Cambrian formation, and is computed by eminent geologists to be 20,000 ft. in depth, and possesses one very striking peculiarity—that is, that one of its great belts of mines runs in an exact direction from 5° to the east of south to 5° west of north magnetic, and as true as the bearing of this metallised line, that a thread held across the Geological Ordnance Map of Cardiganshire passes through the centre of upwards of a dozen extensive mines in about as many miles; the lodes vary from 3 ft. to as much as 60 ft. in width. The Welsh Potos is even more, being in one place 84 ft. in width. The Frongoch lode is 33 ft. in width, containing masses of lead ore of considerable purity for thicknesses of 8 to 10 ft., side by side with divisions of indurated slate, carbonate of lime, and crystallised siliceous matter. This lode is crested with a fine yellow gossan, but in general the lodes of Cardiganshire are crystallised to the surface, but not ferruginous or gossan-bearing. Neither the rock of the country or the veins contain much water, probably 100 gallons per minute would be more than the supply of the most water-bearing vein of the district, and in general the mines are drained by means of water machinery.

From public attention recently being directed to the Welsh Mines, in consequence of the great yield of some of the lodes, it seems not uncalled for to descend upon the merits of Mid-Wales, in which the Manchester and Milford Haven Railway is about to be opened. The mines of this district, although as anciently worked as the Roman Conquest, and mentioned by the Roman historians, did not receive any systematic attention previous to the last quarter of a century. Before that the lead produce of the country was extracted almost exclusively by means of adit levels, it apparently being then thought that the stone of which the country was composed was formed of productive beds above these water lines, or levels, and that no metal existed below, possibly from the prevailing idea of the Yorkshire and Derbyshire school of miners of that day, some of the disciples of which had the management of some of the Cardiganshire mines. About 25 years ago the system of deep mining, according to the Cornish school, was introduced; the first successful issue of this mode of trial was at Cwymystwith, a mine probably 2000 years old. A 30-ft. wheel was applied to pumping the water, instead of manual labour. The lode at some 15 fathoms below the bed of the River Ystwyth formed a flat, or bed, some 6 ft. or 7 ft. in thickness of solid metal, giving as much as 20 tons of lead ore to the fathom, worth 300/-, which was taken away as far as the breaking was concerned, for 21. 10s. per fathom, the mine giving 11,000/- a-year profit. This great concentration of lodes is still working at 6000/- or upwards a-year profit. Frongoch, another peculiarly large and rich lode, was also opened by a 40-ft. water-wheel; this lode was only worked for a width of 2 or 3 ft., but by dialing it was found to be upwards of 30 ft. in thickness—"bl." as it is called in Cornwall. Above the 24 it was found that 38,000/- worth of lead ore had been left, and remained in the sides of the old workings; this soon came away at a great profit, the mine still continuing to be one of the richest in Cardiganshire, and the lode is one of the finest in Wales. Logias was soon afterwards opened by driving an adit 60 fathoms deep eastward; this passed through a sheet of ore 4 to 6 ft. in width, yielding from 50/- to 60/- worth of ore to the fathom for 60 fathoms in length, the metal being hard and comparatively solid. Logias at once became a very profitable mine, and still continues to make profits of thousands a year. This deep adit is now approaching the celebrated Hafod ground, and will yield immense fortunes if continued through that rich mineral estate. The next mine opened was the silver-lead lode of Goginan; the mass of ore in this mine was 18 ft. wide, containing 30 ozs. of silver per ton, and nearly 3 tons of pure silver was raised from the mine in one year, establishing a mine of great profit. Such was the progress of mining in Cardiganshire 25 years ago, and there seems every prospect under the state of things initiating by the new railway era that this great and rich district, partly asleep for so long a period, will be aroused, and will put forth its worth in the shape of a constellation of new rich profit-giving and lasting mines. Those in the habit of receiving information of rich mining districts with caution will say these are splendid results, no doubt, but how were they brought about?—by great capital, no doubt, and great patience? The answer is, that Goginan paid 7000/- per annum profit within three years of its investment, upon a capital of only 500/- Cwymystwith paid 11,000/- a-year profit upon less than 1000/- outlay, and at the period of the regeneration of the mines of Cardiganshire, 25 to 27 years ago, the expenditure in either of the single profitable mines of that district was less than one year's subsequent income of profit. Is this, then, the district, some incredulous enquirer may ask, that we have been systematically enjoined to regard with peculiar caution? We have heard that part of Wales pronounced to be a dangerous neighbourhood for mining. Yes, reader, it must be borne in mind that every statement made with reference to mining is not a disinterested one—one country is often held up to admiration by means of the disappearance of another, but for every assertion here made with reference to the produce, wealth, and prospects of Cardiganshire we can vouch for the truth; but we have not spoken half of the truth with reference to the whole of the mineral riches of Cardiganshire, to which we shall again recur at a convenient season.

**GOLD IN WALES.**—The following is a statement showing the particulars of gold sent from the Vigra and Clogau Mines to the offices in London, in 1861:—

	Result of	Value per oz.
Jan. 18	39 ozs. 0 dwt. .... 0 ton 1 cwt. of stuff .... 80s. .... £156	
Jan. 23	24 " 0 " 0 " 1 " " 80s. .... 96	
Feb. 1	58 " 0 " 8 " 15 " " 80s. .... 232	
Feb. 8	36 " 0 " 7 " 5½ " " 80s. .... 144	
Feb. 22	77 " 0 " 12 " 11 " " 80s. .... 308	
Mar. 1	37 " 15 " 0 " 0 " 0 " 80s. .... 151	
Mar. 8	36 " 5 " 7 " 9½ " " 80s. .... 155	
Mar. 15	38 " 15 " 9 " 7½ " " 80s. .... 155	
Mar. 22	39 " 10 " 7 " 17½ " " 80s. .... 158	
Mar. 29	37 " 0 " 9 " 3½ " " 80s. .... 148	
April 5	40 " 0 " 9 " 15½ " " 80s. .... 166	
April 12	39 " 5 " 9 " 6½ " " 80s. .... 157	
Total	500 ozs. 10 dwts. 88 tons 14 cwts. of stuff.	£2010

**MINE ACCIDENTS.**—At Treleweth Mine, one man was killed and two others seriously injured, by injudiciously using the iron tamping-red boring holes for blasting instead of copper. The explosion literally shattered one of the men, named Hosking, so that when taken up he presented a shocking spectacle. Another man, named Hart, of Marazion, lost both his eyes

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doubt need exist as to the inducements offered by the "Société Générale Franco-Serbe" as a channel for investment. The company are about to raise a loan of 40,000 francs, of which 20,000 francs are proposed to be raised in England, to be secured by bonds of the company, for 8% each, payable to bearer. These bonds carry interest at 6 per cent.; and there is, moreover, one fully paid-up share of 20 francs, given as a bonus to each holder of five bonds. This certainly offers a great inducement, for the company being a *société en commandite*, the shareholders incur no responsibility whatever, either for calls or liabilities, and the dividends are payable half-yearly at the company's bankers in London and Paris.

**THE BEARIZ TIN STREAMING COMPANY.**—Since the date of our last publication we have carefully examined the prospectus, plans, and reports published by this company, and there are many features in it with which we are very much pleased. We conceive we are more than justified in recommending all our readers who are interested in mining matters to procure the prospectus, and consider the statements it contains for themselves.

In order to induce them to do so we need only refer them to the following extracts:—

"The entire property, which is situate only 30 miles from Vigo, comprises a mineral area of about 256 English acres. The tin ore is deposited in kaolin, or china-clay. Careful analysis shows that the kaolin yields a 250th part of its own weight of rich tin ore, which produces 62½ per cent. of its own weight of pure metallic tin; so that if 500 tons of the kaolin be washed, 2 tons of ore are readily obtained, which yield 1½ ton of pure tin. The operations which are necessary to work this property are extremely simple and easily carried on. Labour in the neighbourhood of the property is abundant and cheap, at present the wages of a good ordinary labourer not exceeding a shilling a day. The property presents a field for tin-streaming which may be said to be almost inexhaustible by any operations which it is probable will be directed to it. On the average it is found that 4 tons of kaolin are raised by one man's labour for a single day at this property, and therefore, that 156 men in the year, of 240 working days, can raise 149,760 tons. But assuming that the kaolin contains only a 300th part of its own weight of ore, and that the ore contains only 50 per cent. of its own weight of tin, the 149,760 tons of kaolin will still yield no less than 500 tons of ore, giving 250 tons of pure metallic tin; and from a carefully-prepared estimate by Senor Merelles of the cost of production, which will be found in the appendix to the prospectus, it will be seen that 1 ton of tin can be produced for sale at the works at a cost, including the rent to be paid to Senor Merelles and all other charges, of 647. 1½. 5d., which, reckoning the selling price at only 125%, will leave a profit of 602. 5s. 4d. per ton; or, on the year's produce of 250 tons, as calculated by Senor Merelles, and confirmed by Captain Barratt, a net profit of 15,066. 13s. 4d. per annum—which would be equal to 75 per cent. on the whole of the proposed nominal capital of this company." The following is extracted from the report of Capt. F. Barratt, Jun., of St. Austell, Cornwall, an experienced professional inspector of mines in Cornwall, who was sent by the company to Spain to examine the property:—

"The kaolin is a formation of felspar, some of which is decomposed, and is the same as porcelain, or china-clay; it traverses the country for about seven miles long, running nearly north and south; it varies in width from 4 to 20 fathoms, and it appears to be widening in depth: in the deepest workings they have sunk in this kaolin for 6 fms. without coming to the bottom of it; upon it is an overburden of micaceous slate from 6 to 18 feet thick." "The tin ore is disseminated throughout the whole of this kaolin; and from samples taken from the mass and brought to England by myself, and which I have since assayed, and washings I made whilst at the mines, I consider it to be worth, on the average, a 250th part of tin ore, or 1-5th per cent. of metallic tin; the quantity of this kaolin is almost inexhaustible, and the only question is the expense of raising and washing it." "The workings have hitherto been carried on in a very rude way; pits are sunk in the kaolin, and in raising it from the sides of these pits the overburden before referred to be undercut often falls, and stops for the time all operations in that particular spot. The washing or dressing process is equally imperfect; the stuff broken is carried (often on women's heads) to a running stream of water; this first washes away the clay, the rough sand is then separated from the fine by hand, the finer portions are washed in this stream also by hand, until the tin ore is fit for the smelting-works." "The following are the relative proportions of the clay and rough and fine sand in a sample of the kaolin I have examined:—Decomposed felspar, or clay, 55 per cent.; rough sand, 11½%; fine sand, 26½=100 per cent. The produce of tin ore was 41-100ths per cent.; the tin ore produced 62½ per cent. of metallic tin of very good quality." "I consider that if this property be worked upon an extensive scale, in a skilful and efficient manner, it will amply remunerate the company for the capital which it will be necessary to expend upon it. It will be seen that I consider the estimate by Senor Merelles of the cost of raising and washing out the tin is higher than it will be found to be under proper working arrangements; and I believe that an outlay of 10,000 francs, progressively and judiciously expended, will be amply sufficient to open out the workings, and erect the requisite machinery at various points, and then, with the employment of additional hands, 250 tons of tin per annum may be produced." The following is an extract from a report by Capt. J. Dailey, of St. Austell:—"I have come to the conclusion that the property is of very great mineral value." Mr. Barratt has had much experience in working the greatest tin-producing streams, and in washing the china-clay beds in this district; and I may observe, that it is here where the principal tin-streaming works in Cornwall and Devon are carried on; and the whole, or nearly so, of the china-clay used in Europe and America, is taken out within a circuit of six miles of this place, so that Mr. Barratt is, probably, better qualified than any other person from any other district would be to advise as to a plan for future operations on Senor Merelles' property. As he states, the proper plan, and that which is adopted in all works of the kind here, is, in the first place, to remove the surface crust, or strata, now lying above the kaolin, or clay, by barrows or carts, and then to bring in over the clay streams of water, which will carry off the decomposed felspar, and leaving the rough and fine sand which contains the tin to be treated in the most efficient way practicable." "There will be no underground workings required in order to develop this great felspar formation in Senor Merelles' property, and I believe that if the works be carried on in the manner in which the tin-streaming and china-clay works in this district are prosecuted, very profitable results must be realised." It is further stated in the prospectus that charcoal for smelting can be obtained in any quantity near the property, delivered there at a cost of 12. 15s. 6d. per ton. That the kaolin existing in this property is itself a china-clay of good quality, and in England would be worth 17. 12s. per ton. That the directors have entered into a conditional contract for a lease for ten years, renewable by notice for ever (terminable at any time, at the option of the lessees on eight months' notice), of this extensive property, with the minerals, plant, machinery, smelting-works, stamps, washing-floors, tools, and everything at the property and works as at present conducted. That the directors have been guided by the advice of a practical miner of great experience both in England and abroad. That no shareholder will incur any liability beyond the amount of shares allotted. That no call beyond the 7s. 6d. per share paid on allotment will be made payable within six months from April 1, 1861, and three months' previous notice will be given of the payment of any such further call. That as the rule of the Stock Exchange requires that two-thirds of the shares of companies be subscribed for prior to quotation in the public list, the directors of this company will not proceed to the allotment of any shares until more than that proportion shall be subscribed; and that in case the company shall not be established, all deposits will be returned in full. [We observe that the list of applications for shares in this company is to be closed on Monday, May 7.]

## FOREIGN MINES.

**ST. JOHN DEL REY MINING COMPANY (Limited).**—Advices from Brazil: March 16.—The produce for the month of Feb., I have pleasure in advising, amounts to 36,640 cts. It has been derived as follows:

	Oitavas.	Tons stone.	Oits. per ton.
From General stamps .....	10,522	.....from 3539.2 = 5,615	
Herring (East Bahia) .....	7,930	947.2 = 8,373	6,098
" Lyon (W. & Mid. Cach.) ..	5,879	979.2 = 6,003	
" Arrastres .....	1,607	.....	= 0·294
	34,938	5465.6	= 6,392
Prain (stamps & arrastres). .	1,702		
Total produce .....	36,640	oits. 251-999 lbs. troy.	

Considering the number of days in Feb., the foregoing is very large produce for that period; compared with the previous month it is better. The produce for Jan., 36,780 cts., 5,688 cts. standard, 1250 cts. daily; for Feb., 36,640 cts., 6,392 cts. standard, 1308 cts. daily. The standard yield is higher than that obtained in Jan., and also the daily produce is greater. It is the largest produce extracted, excepting in December, which was 40,202 cts., and the standard yield per ton in that month was 6,138 cts., as against 6,392 cts. obtained in Feb. This produce for the month may be considered as good and satisfactory.—COST AND PROFIT.—

The produce for February is..... 36,640 cts.  
Less loss in melting ..... 145 cts.

Leaving ..... 36,497 cts., at 7s. 7d. per oit. £13,838 8 11  
The cost for February is Rs. 77,172 \$580, exchange 2s. 2½d. .... 8,601 10 6

Leaving profit on the month's working ..... £ 2,526 18 5

**LUSITANIAN.—Palhal Mine, April 15:** The ground in the 40, south of Oak shaft, is a hard gneiss rock. The ground in the 50 cross-cut, south of River shaft, has improved slightly.—Basto's Lode: The lode in Taylor's shaft, below the 50, has not been taken down since our last. The lode in the 50, east of Taylor's shaft, is 3 feet wide, worth 1½ ton per fathom of copper of a low quality. The lode in the 50, west of Taylor's shaft, is split into branches, none of which are productive of copper ore. The lode in the rise in back of the 35, west of Taylor's engine-shaft, is worth 1 ton per fathom. The lode in the 50, west of River shaft, is 2½ feet wide, composed of quartz, mica, and stones of copper ore.—Levada East of River Shaft: The lode in the 35 east is 4 feet wide, composed of flocks and quartz, with a piece of country in the middle of it. The lode in the 28 is 4 feet wide, composed of quartz and spots of lead. The lode in the 18 is of just the same nature as the 28. The lode in the 8 is 1 foot wide, composed of flock and stones of lead. The lode in the 18, east of Pinto's shaft, is 9 inches wide, composed of flock and stones of copper ore. The lode in the 18, below the adit level, east of Perez' whim-shaft, is 1½ feet wide, producing stones of copper ore. The lode in the stopes No. 1, in back of the 50, west of Ernesto's whim, is worth 1½ ton per fm. The lode in the stopes No. 2, in back of the 28, east of Claudio's whim, is worth 1 ton per fm. The lode in the stopes No. 3, in back of the 38, east of Henrique's whim, is worth 1 ton per fathom. The lode in the stopes No. 4, in back of the 25, west of Claudio's whim, is worth 1 ton per fm. The lode in the stopes No. 5, in back of the 28, east of Claudio's whim, is worth 1 ton per fm. The lode in the stopes No. 6, in back of the 28, east of Figueredo's rise is worth 1 ton per fm. The lode in the stopes No. 7, in back of the 60, west of Taylor's engine-shaft is worth 1½ ton per fm. The lode in the stopes No. 9, in back of the adit west of Perez' whim-shaft, is worth ½ ton per fm.—Mill Lode: The lode in the 38 west continues in two branches; each of them is productive ore, and together are worth 1½ ton per fathom. The lode in the 28, east of the side lode, is 1½ feet wide, composed of flock and the country spotted with lead. The lode in the 18, west of the caunter lode, is 1½ feet wide, producing small stones of ore. The lode in the stopes No. 10, in bottom of the 18, east of the junction whim, is worth 1 ton per fm. The lode in the stopes No. 11, in back of the 18, east of Dea's whim, is worth 1 ton per fm. The stopes No. 12, in back of the 38, west of the caunter lode, are worth 1 ton per fm.—Caunter Lode: The lode in the 50, west of Taylor's shaft, is 6 inches wide, composed of quartz and spots of copper ore.—Great Caunter Lode: The lode in the 20, east of Oak engine-shaft, is 6 inches wide, composed of flock and quartz. The lode in the 20, east of Oak engine-shaft, is 7 feet wide, spotted with lead throughout. The lode in the stopes No. 13, in back of the 20 fm, west of Oak shaft, is worth 1 ton per fm. of lead and copper mixed.—Ponte Lode: The lode in the adit west of the Calima is 6 inches wide, composed of mica and quartz.—Slide Lode: The lode in the 28, west of the Mill lode, is 1 foot wide, composed of flock and quartz, and stones of copper ore. The lode in the 20, west of Oak shaft, is 1½ feet wide, composed of flock and quartz. The lode in the rise above the 28, going up against the whim in the bottom of the adit, is 3 feet wide, composed of flock and spar.—Carvalhal: The lode in the adit, west of the River Calima, is 2 feet wide, composed of quartz and mica. The lode in the adit level, west of the same river, on the Freita lode, is 1 foot wide, composed of quartz.

**THE BEARIZ TIN STREAMING COMPANY (LIMITED).**—THE LIST OF APPLICATIONS FOR SHARES in this company WILL BE CLOSED ON MONDAY, 6th of May next.

By order of the Directors, ALEX. STRACHAN, Secy., 174, Saxe-lane, Buxton, April 27, 1861.

**METALLURGICAL OFFICE.—A. VIMEUX AND CO., 3, RUE D'AVAL, BOULEVARD BEAUMARCHAIS, PARIS,** are in a position to give every information respecting the solvency of any individual or firm connected with metallurgical industry in France.

Price for a single report ..... 2s. 6d.

Price for more than ten, each ..... 2s. 6d.

Debts collected, and disputed claims negotiated. The establishment of this office, the operations of which have been already fully appreciated, is of uncontested utility to the whole of the metal trade. Discretion, punctuality, activity, and vigorous enquiry may be depended upon. Correspondent, Mr. E. Vimeux, 80, Upper Stamford-street, London. Postage stamps may be sent in payment.

**MINING AND CANNON FUZES.—ABEL'S FUZE, FOR FIRING MINES, CANNON, &c., BY MAGNETO ELECTRICITY.** Orders executed by Wm. Ladd, 11 and 12, Beak-street, Regent-street, W., appointed sole manufacturer by permission of the Secretary of State of War.

FIFTEEN TO TWENTY, and even TWENTY-FIVE PER CENT. PER ANNUM upon current value of shares, in CORNISH TIN and COPPER MINES.

Dividends payable two-monthly or quarterly.

**MESSRS. TREDENNICK AND CO., MINING ENGINEERS, SEND their SELECTED LIST OF SOUND PROGRESSIVE AND DIVIDEND SHARES upon the receipt of a Fee of One Guinea.**

Review of Cornish and Devon Mining Enterprise, 6s. per copy.

Maps per post of the Buller and Bassett, Great Vor, Alfred Consols, the Providence and Margaret Districts, 2s. 6d. each.

Cornish Mines, wpt selected, pay better than any other description of securities, are free from risks, and entail less responsibility than banks and other joint-stock companies. Shares bought and sold on commission of 2½ per cent.

Money advanced at 10 per cent. annually, for short or long periods, upon approved Mining Shares.—78, Lombard-street, London, E.C.

**BRITISH AND FOREIGN INVESTMENTS EFFECTED IN THE FUNDS, BANKS, INSURANCE, MINES, and RAILWAYS, by Messrs. FULLER AND CO., No. 8, MOORGATE STREET, LONDON, E.C.**

Country and foreign communications, also telegraphic messages, promptly attended to; dividends, &c., on Government and other stocks collected; and every description of Stock Exchange business transacted.

Mining investment affords to the capitalist a safe and profitable security, paying from 12½ to 20 per cent. Dividends are paid quarterly, free from risk, and exempt from heavy responsibilities, such as banking, &c.

Messrs. FULLER and Co., being in daily communication and correspondence with men of high scientific and practical experience, have the means of obtaining the most correct information as to the future prospects of the principal mines in the kingdom.

Progressive Mine Shares frequently advance from 1 to 500 per cent.; a judicious selection of which cannot fail to repay all who invest, and of becoming permanently profitable. Information obtained and advice given, either personally or by letter, as to sound legitimate investment.—Office hours from Ten till Five o'clock.

**THE MINING JOURNAL.**—WEEKLY LIST OF NEW PATENTS.

GRANTS OF PROVISIONAL PROTECTION FOR SIX MONTHS.—J. B. SCHREKEL, Boston, U.S.: Packing for projectiles for guns or ordnance.—A. SOUTHWOOD, Wolverhampton: Manufacture of tyres for wheels.—A. WARD, Birmingham: Apparatus for transmitting signals on railway trains.—J. MOSAM, Upper Thames-street: Cables for submarine or other electric telegraphs.—W. RICHARDSON, Leicester: Improvements in carriage and other axles, and also in shafts and other parts of machinery exposed to the action of the atmosphere.—W. BISHOP, Bristol: Screw propellers.—P. G. GARDNER, New York: A new improved spring.—J. SHAND, Blackfriars-road: Steam fire-engines and pumps.—W. E. NEWTON, Chancery-lane: Pressure gauge.—T. CARR, Lancaster: Machinery or apparatus for forging and shaping articles of iron or other metals or materials.

**CASE-HARDENING AND SOFTENING IRON.**—M. Jules Cazanave, Paris, has patented an improved system of treating iron, by which it is enabled to obtain iron of desired strength, hardness, and malleability. To wrought-iron he adds a cyanide of ammonia, distilled from charcoal, soot, or waste from oleaginous substances. To cast-iron he adds 90 per cent. of calcareous matter and 10 per cent. of the cyanohydrate-producing substances. Partial cementation may be secured by modifying the process. In making cylinders, several longitudinal strips of wrought-iron are bound together by hoops or bands placed at suitable distances apart. The open cylinder thus formed is to be placed in the mould, into which the cast-iron is then to be poured or run; and when cold the article is to be submitted to the operation described for cast-iron.

**TREATING METALLIC OXIDES.**—Messrs. Muller and Leneauchez, of Paris and Besançon, propose to treat metallic oxides directly in contact with the fuel, by the aid of a blast-furnace.

**IMPROVED PUMP.**—Mr. James Edney, New York, has invented an improved double-action pump. The piston may be described as a cylinder, with valves opening outwards at each end; each end of this piston has a cylinder, in which it works, egress-valves being provided at the extremities farthest from the centre. A rocking lever causes the piston to move backwards and forwards, and at each stroke the water from the well enters the piston, and is expelled through one of the cylinders, according to the motion of the pump. The pump is to some extent counterbalancing, but occupies rather more space than the ordinary pump.

**IMPROVED LUBRICATING MATERIAL.**—In the preparation of an improved lubricating material, Mr. Wildsmith, of Wolverhampton, proposes to take a solution of gelatine in water, and place it in a vessel capable of being closed steam-tight; he prefers the solution to have a specific gravity about one-tenth greater than that of water. The solution is heated to boiling point, and nitric or nitrous acids added in the proportion of one part acid to 180 parts solution. The vessel is then closed, raised to a temperature of 230° Fahr., and kept so for 20 or 30 minutes, the contents being well agitated all the time. By this treatment the solution of gelatine becomes converted into a semi-solid granular mass, which may be used as a lubricant, either alone or mixed with the substances with which gelatine is, or may be, mixed when used as a lubricant. Bichromate of potash, or chloride of lime may be substituted for the acids named with nearly the same effect, and the new lubricating material may be used as a substitute for the common kinds of grease in the manufacture of soap.

**JOLLY'S REMONTOIR.**—In this invention, for winding-up and setting watches without using keys, patented by Mr. Jolly, as a communication from Mr. Bertholon, it is so contrived that it may be depressed at one end while moving up at the other, and vice versa, so that according to the end that is depressed one of its wheels is brought into connection with a wheel on the barrel arbor, or with the minute work separately; and these wheels gearing into the central wheel, which is worked by a pinion operated from outside the watch, the watch may be wound without interfering with the hands, or set without interfering with the spring.

**NEW THEORY ON THE COMPOSITION OF STEEL.**—In a lengthened communication, addressed to the *Moniteur Industriel*, by "Un Forgeron," it is remarked that every honour is due to M. Fremy for having demonstrated by researches at once interesting and conclusive the existence of nitrogen as a necessary element in the composition of steel. This was long suspected, but it is M. Fremy who has broken the end of the egg, and the presence of nitrogen may now be considered as an accomplished fact in a scientific point of view. It is a somewhat extraordinary, but at the same time invincible, circumstance that when an important discovery is on the eve of being made manifest to the public such discovery never comes forward alone, but always in divers ways and in various places, frequently very distant from each other, and yet simultaneously. Science and industry are now ripe for the discovery which is now being brought to light spontaneously. The writer refers to the

**LARGE IRONWORKS AND COLLIERY ROYALTY FOR SALE.**—The EXTENSIVE IRONWORKS of VULCAN, on the right bank of the Rhine, in PRUSSIA, close to the mouth of the Duisburg Canal and the mouth of the navigable River Ruhr, adjoining the great coal district of the Ruhr and Westphalia, and having connection by a branch railway with the Cologne-Minden Railway, and thereby with all parts of the Continent, are, in consequence of the dissolution of the company, to be PUBLICLY SOLD in the month of June next.

These works consist of FOUR LARGE BLAST FURNACES, with BLAST and OTHER ENGINES, COKE OVENS, machinery for loading and unloading materials from the Rhine and Duisburg Canal, FOUNDRY, MECHANICAL WORKSHOPS, with TOOLS and MACHINERY belonging thereto, and every convenience for the immediate resumption of work on a large scale.

In addition is a COLLIERY ROYALTY around the works, consisting of about 1500 English acres, with a pit partially sunk by an English contractor of eminence, and large PUMPING and DRAWING ENGINES, BOILERS, and necessary BUILDINGS, in full order and ready for immediate use, with many acres of land, sufficient for a pit-village and all other purposes.

The position of these extensive works, and their connection by the Rhine and railways with the ironstone mines belonging to the works on the Rhine (and which are to be sold with the works), together with the high protective duties which exist in Germany for iron, afford a peculiarly favourable opportunity for a practical British ironmaster to realize a good profit from their purchase and working.

Further details and information will be readily afforded on written or personal application to the chairman of the commission appointed for the liquidation of the affairs of the Vulcan Company, F. HAMMACHER, Doctor of Laws, Essen, Rhine Province, Prussia.

DERBYSHIRE.

**THE ALDERWASLEY FORGE AND WORKS, NEAR THE AMBERGATE STATION ON THE MIDLAND RAILWAY.—TO BE LET,** on a lease for 7, 14, or 21 years, and may be entered upon immediately, the above-mentioned FORGE and WORKS, with the STORE ROOMS, OFFICES AND BUILDINGS, ROLLING AND SLITTING MILLS, on the banks of the River Derwent, in the liberty of Alderwasley, and the WATER-WHEELS of 70 horse power and MACHINERY belonging thereto, late in the occupation of Messrs. Mold, who for nearly 50 years carried on a lucrative and extensive business as ironmasters at the said works, together with a newly-erected MESSUAGE, or DWELLING HOUSE, very pleasantly situated near the said works, with the green-house, stables, coach-house, and capital garden belonging thereto, and upwards of 30 acres of excellent land, and 15 workmen's houses and counting-house, near or contiguous to the works.

The works are situated within half a mile of the Ambergate station on the Midland Railway, and the Cromford and Belper turnpike-road, the branch railway from Ambergate to Rowsley (on which there is a siding and wharf for the use of the works), and the Cromford Canal (attached to which is a wharf also for the use of the works), all parallel therewith and immediately contiguous thereto, and afford excellent railway and canal transit to and from London, Leeds, Nottingham, Derby, and all parts of the kingdom; and the extension of the railway from Rowsley to Buxton, now in progress, will give a direct communication with Manchester, Liverpool, &c.

The works are also available for saw-mills on an extensive scale, or for any other purpose requiring power and facility of transit.

For further particulars, and to treat, application may be made to Messrs. Woodhouse and Jeffcock, civil and mining engineers, Derby; or at the offices of Messrs. Newbold and Son, solicitors, Matlock, from whom tickets may be obtained to inspect the works.

**IMPORTANT TO MINERAL PROPRIETORS.—TO BE LET** OR SOLD, the whole MINERALS of SOUTH and OVER CUMBERHEAD, consisting of LEAD, COPPER, ZINC, IRON, &c., situated near LESMAHAGOW, in the Upper Ward of LANARKSHIRE. As these, with one or two exceptions, in active operation, are the only mines of the kind in Scotland, as they were undoubtedly worked to advantage in remote times, and are known to have been little or at all disturbed for the last century and a half, possessing the great advantages of being in a populous county, in the same district as the celebrated lead hills, with good access by a mineral railway in their immediate neighbourhood, and the progress of mining science in facilities and working economy have been enormously developed during this long period, they may be considered to present a most tempting field for the enterprise of mining capitalists.

In a report upon them in 1815, by Professor Jamieson, of Edinburgh, the most eminent geologist of his day, he concludes as follows:—"The magnitude of the veins, the quantity of ore which previous trials have shown them to contain, the excellence of the ore, the nature of the vein stones, the kind of strata traversed by the veins, are considerations which induce me to recommend them to, and deem them worthy of, the attention of a mining company."

Reports and further information may be had on application to Mr. HUGH BOGLE, 123, St. Vincent-street, Glasgow.

TO COAL AND IRONMASTERS, AND OTHER CAPITALISTS.

**CHARITY COLLIERY, BEDWORTH, WARWICKSHIRE.—TO BE LET,** and entered upon immediately, the whole of the VALUABLE MINES OF COAL, IRONSTONE, LIMESTONE, and CLAY, now in full work, at the above colliery, together with the substantial farm-house and all necessary outbuildings, and about 80 acres of first-rate arable, meadow, and pasture land, being the estate in which the above-mentioned mines are situated.

The tenant will be expected to take to the engines, railways, skips, and other moveable plant now in work at the said colliery, and also to the farm implements, stock, and other moveables on the said farm, at a valuation to be made in the usual way, by parties to be respectively chosen by the landlord and tenant.

The above establishment is well worthy the attention of capitalists desirous of embarking in mining speculations, as a large area of coal is already opened out, and the present plant may be extended by a moderate outlay through the shafts already sunk, to win the remaining portion of coal, which consists of upwards of 70 acres of fully 20 ft. thick of marketable coal.

This colliery is situated at Bedworth, in the county of Warwick, in the middle of a populous neighbourhood, being distant from Coventry only five miles, from Nuneaton three, and from Atherton seven. The Coventry Canal passes through the colliery, as also does the Coventry and Nuneaton branch of the London and North-Western Railway, affording a cheap outlet for the products of these mines to all parts of the kingdom.

The coal is of a superior quality, and much sought after as fuel for furnaces, brick-yards, and locomotive engines on railways, as well as for general domestic purposes.

The ironstone is of a very rich quality, yielding a large percentage of good malleable iron, and is exported in large quantities from the works to the smelting furnaces in South and North Staffordshire, where it is found to combine with advantage with the other ironstones which are emitted at those works.

For a view of the colliery, apply to Mr. J. P. EVANS, of Griff, near Nuneaton, the bailiff to the Governors of Bedworth Hospital (who are the proprietors of the colliery), at whose office can be seen plans of the colliery and estate; and for any further particulars apply to Messrs. Woodhouse and Jeffcock, mining engineers, Derby, and to me at my office, in Bailey-lane, Coventry.

CHARLES WOODCOCK, Clerk to the Governors of Mr. Nicholas Coventry, April 26, 1861. Chamberlain's Charity, in Bedworth.

**TO BE SOLD, BY PRIVATE TREATY, the EXTENSIVE, VALUABLE, and well established ENGINEERING, IRON FOUNDRY, and MILLRIGHT WORKS, known as the UNION FOUNDRY, in BOLTON-LE-MOORS, in the county of LANCASTER.**

The LAND occupied by these works contains nearly four statute acres, situate in the centre of the town of Bolton, is bounded on the east, south, and part of the north sides by wide and excellent streets, and the London and North-Western Railway extends along and adjoins to the whole of the west side thereof, and communicates with lines of railway and the navigable part of the River Tamar.

The auctioneer respectfully calls the attention of mine agents, ironfounders, carpenters, &c., to this valuable stock, the whole being of the best manufacture, and nearly new.

An early attendance is requested, as the lots are numerous, and the whole must be sold in one day.

Refreshments on the table at Twelve o'clock, and the sale will commence at One o'clock precisely.—Dated Plymouth, April 22, 1861.

LEWIS MINES, ST. ERTH, CORNWALL.

**MR. JOHN LITTLE WILL SELL, BY AUCTION,** at the account house, on the above mines, in the parish of St. Erth, near Hayle, Cornwall, on Monday, the 6th day of May next, at Twelve o'clock precisely, the whole of the VALUABLE and extensive TIN MINE and MATERIALS, in One Lot.

The MACHINERY consists of ONE 60 inch CYLINDER ENGINE, with THREE BOILERS, all in excellent condition.

ONE 24 in. CYLINDER WINDING ENGINE, with cage, fly-wheel, and boiler complete, new, from the foundry of Messrs. Sandys, Vivian, and Co., Hayle.

ONE 32 in. PUMPING ENGINE.

ONE 17 in. DRAWING ENGINE, with cage and boiler.

ONE 82 in. STAMPING ENGINE, with 48 heads of stamps attached.

120 fms. of 14 in. and 16 in. pitwork, with bottoms complete, and in excellent order;

40 fms. of 8, 9, and 10 in. pumps, with bottoms, &c.; 60 fms. of 2 in. round iron flat-rods; 300 fms. of tramroad iron; capstan, capstan rope, sheaves, 210 fms. new 6 in. flat-rope for drawing, horse whisks, chains, &c.; extensive tail dressing floors, frames, bushes, kieles, &c.; also, burning house and calciner, commodious and convenient dry and pitman's house, blacksmiths tools, &c.

Also, the account-house furniture, with everything necessary on a well-found tin mine in full work.

The agents on the mine will render every information to intending purchasers, and afford every facility for inspection. An inventory of materials will shortly be ready on the mine, and for further particulars apply to JOHN LITTLE, auctioneer, at his office, Redruth.

A RARE OPPORTUNITY OF INVESTMENT.

TO WATER AND DRAINAGE COMPANIES, MERCHANTS, MINE AGENTS, ENGINEERS, FOUNDRYMEN, AND OTHERS.

PERRAN ST. GEORGE MINES, PERRANZABULOE, CORNWALL.

**MR. CORFIELD is authorised to SELL, BY TENDER, the WHOLE of the remainder of the VALUABLE MINING MATERIALS and EFFECTS of the above MINES, consisting of—**

A VALUABLE PUMPING-ENGINE, 60 in. and 100 in. cylinders (combined), 8 ft. stroke, equal beam, with four boilers, by Sims, about 36 tons.

ONE 80 in. ENGINE, 10 ft. stroke in cylinder, and 9 ft. in shaft, with two boilers, about 22 tons.

20 in. WINDING ENGINE, with boiler, about 6 tons.

AN 18 in. CRUSHING ENGINE, with crusher, complete, and boiler, about 6 tons.

From thirty to forty pumps, 19 in. to 20 in., various lengths; several windbores and working-barrels, matching-pieces, doorpieces and doors, stuffing-boxes and glands, about twenty hammered iron rod plates, plunger-poles, yokes, and many other articles required for mining and other purposes.

Perran St. George is situated within eight miles of Truro, near to Perran Porth, and is contiguous to good roads, and abuts the Bristol Channel, which affords great facilities for the removal of the materials.

For descriptive particulars and to view apply to Capt. PILL, on the premises; and all other information had of Mr. CORFIELD, auctioneer and general agent, Penryn, to whom tenders must be sent, on or before Tuesday, the 7th of May next; soon after the person whose tender shall be accepted will have due notice thereof.

Penryn, April 24, 1861.

N.B. This notice will appear but once; and in the event of no advantageous offer being made on the above day, the whole will be submitted to public auction (with the exception of three or four lots), without reserve, as will appear in subsequent advertisements.

GOVERNMENT OFFICIALS—REDUCTION IN SCALE OF PREMIUMS.

**THE EUROPEAN ASSURANCE SOCIETY ISSUES POLICIES OF GUARANTEE, at reduced rates, for officials in or under the Treasury Customs, Inland Revenue, Board of Trade, Poor-Law Board, Admiralty, and other public departments, and for bank and railway clerks and persons in commercial employments.**

Further reductions on the combination of life assurance with guarantee. Annuities granted on favourable terms.

Forms and every information may be obtained at the chief office, No. 2, Waterlooville, Pall-mall, London.

**TO CAPITALISTS.—MESSRS. LEICESTER AND CO., INSPECTORS AND VALUERS OF MINES, &c., MELBOURNE, VICTORIA, OFFER THEIR SERVICES TO SELECT AND INVEST CAPITAL in MINING PROPERTIES, for which they charge  $\frac{1}{4}$  per cent.; and they also COLLECT and TRANSMIT THE DIVIDENDS, charging  $\frac{1}{4}$  per cent. on their amount. Messrs. LEICESTER and CO. earnestly call the attention of capitalists to the many opportunities they possess of investing, to pay from £50 to £150 per cent. per annum. Some smaller £'s will be charged extra. All remittances must be made through our agent, Mr. RICHARD MEDDESSON, Mining Journal office, 26, Fleet-street, London; or direct through our bankers, the Union Bank of Australia.**

**THE MINING JOURNAL.**

**YORKSHIRE.—FREEHOLDS, COPYHOLDS, AND BEDS OF COAL, LAKE LOCK, NEAR WAKEFIELD.**

**T O BE SOLD**, pursuant to an Order of the High Court of Chancery made in certain Causes of HOYLAND v. HEMINGWAY, and HOYLAND v. HEMINGWAY, and by arrangement with the owners, with the approbation of the Vice-Chancellor Sir Richard Torin Kindersley, the Judge to whose Court the said cause are attached, by Mr. Edward Lancaster, the person appointed by the said Judge, at the Stratford Arms Hotel, in Wakefield, in the county of York, on Monday, the 13th day of May, 1861, at Two o'clock in the afternoon, in six lots, VALUABLE FREEHOLD and COPYHOLD ESTATES, situate at or near LAKE LOCK and ALTOFTS, near WAKEFIELD, in the county of York, containing 40 acres or thereabouts, and now or late in the several occupations of Millington Crow, Robert Cleghorn, Henry Wilde, William Copley, John Craven, Mrs. Hawshaw, Thomas Brassey, Smith, and Watson, Messrs. Charlesworth, William Craven, and Michael Calvert.

Also, the BEDS OF COAL and OTHER MINERALS under the old enclosed parts of the same, and other estates lately sold in the above Causes, all late the property in equal moieties of Shepley Watson, Esq., deceased, and Edward Hemingway, Esq., deceased.

Printed particulars and conditions of sale, and plans of the estate, may be had ( gratis ) in London of Messrs. PERKINS and SON, solicitors, 13, Great James-street, Bedford-row; and Messrs. FEW, Henrietta-street, Covent-garden; and in the country of Mr. HOYLAND and COPYHOLD ESTATES, situate at or near LAKE LOCK and ALTOFTS, near WAKEFIELD, in the county of York, containing 40 acres or thereabouts, and now or late in the several occupations of Millington Crow, Robert Cleghorn, Henry Wilde, William Copley, John Craven, Mrs. Hawshaw, Thomas Brassey, Smith, and Watson, Messrs. Charlesworth, William Craven, and Michael Calvert.

Dated the 27th day of March, 1861.

CHAS. PUGH, Chief Clerk.

**In the Court of the Vice-Warden of the Stannaries.**  
**STANNARIES of Cornwall.**

**In the Cause of WILLIAMS AND OTHERS v. DUNSTAN.**

**IN RE SOUTH CLIFFORD UNITED MINES.**

**T O BE SOLD**, pursuant to an Order made in the above-mentioned Cause, and bearing date the 13th day of February last, BY PUBLIC AUCTION, at SOUTH CLIFFORD UNITED MINES, in the parish of Gwenapp, within the said Stannaries, on Tuesday, the 30th day of April inst., at Eleven o'clock in the forenoon, either together or in Lots, the undemanded MINING MACHINERY and MATERIALS—viz., ONE STEAM ENGINE, 56 in., 10 ft. 9 in. stroke, with BOILER 10½ tons, and first piece of rod; together, also, with a variety of mine materials, full particulars of which are given in the local papers and in handbills.

For viewing the same, application may be made to Mr. HOCKIN, the officer of the Court in possession; or to JOSEPH ROBERTS, plaintiff's solicitor, Truro; or to Messrs. HODGE, HOCKIN, and MARRACK, solicitors, Truro (agents for H. Grylls Hill, 17, Barge-yard Chambers, Bucklersbury, London).—Dated Registrar's Office, Truro, April 17, 1861.

CHAS. PUGH, Chief Clerk.

**DERBYSHIRE.—TO CAPITALISTS, MINERS, AND OTHERS.**  
**IMPORTANT SALE OF VALUABLE LEAD MINE SHARES, IN THE HIGH PEAK, IN THE COUNTY OF DERBY.**

**M ESSRS. MOODY AND NEWBOLD WILL SELL, BY AUCTION,** at the house of Mr. George Hibbert, the Bull's Head Inn, in Eyam, in the county of Derby, on Thursday, the 2d day of May, 1861, punctually at One o'clock in the afternoon, in such lots as may be determined by the vendors at the time of sale, and subject to such conditions as will be then produced—

THREE HUNDRED AND TWENTY FOUR SHARES of and in the BLACK HOLE MINING COMPANY'S MINES, known as the BLACK HOLE, the LITTLE PASTURE, the GREAT PASTURE, and the BROADLOW consolidated titles, and of and in the PLANT and MATERIALS belonging thereto.

FIVE SHARES of and in the CHAPEL DALE MINING COMPANY'S MINES, known as the CHAPEL DALE and HARD RAKE consolidated titles, and of and in the PLANT and MATERIALS belonging thereto.

And FIFTY-SIX SHARES of and in the WATERGROOVE MINING COMPANY'S MINES, known as the VICTORY LEVEL, BURNT HEATH, and WATERGROOVE consolidated titles, and of and in the PLANT and MATERIALS belonging thereto.

All the calls on the shares are paid up, and the mines are situated in the immediate vicinity of the Eyam Mining Company's celebrated workings in that neighbourhood.

Further particulars may be obtained of the agents of the several mines; the auctioneers, Wardwick, Derby; or at the offices of Messrs. NEWBOLD and Son, solicitors, Matlock.

**NOTICE.—The SALE of WHEAL NELSON MINE and MATERIALS WILL NOT TAKE PLACE** on the 1st of May next, as advertised last week in the *Cornwall Gazette*, *West Briton*, and the *Mining Journal*.  
Dated Barncoose, April 22, 1861.

JNO. BURGESS, Auctioneer.

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**IMPORTANT TO THE IRON TRADE.**—By the AID of J. BROAD'S PATENT APPARATUS for ECONOMISING COAL and OTHER FUEL in BLAST FURNACES, EVERY AVAILABLE PARTICLE of SMALL FUEL MAY BE so USED as to be nearly equal in efficiency to large coal and coke.—17, Belgrave-terrace, Villa-road, Handsworth, near Birmingham.

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WIRE-ROPE TESTING.

**PUBLIC TEST of A. J. HUTCHINGS AND CO.'S PATENT WIRE-ROPE at LIVERPOOL, FEBRUARY 27, 1861.** [From the *Daily Post* of March 1, 1861.]

On Wednesday, the 27th of February, a series of EXPERIMENTS on WIRE-ROPE took place at the Corporation Testing Works, King's Dock. The specimens tested were manufactured by the well-known firm of A. J. HUTCHINGS and CO., of Millwall, London, the Contractors to the Lords of the Admiralty and various foreign Governments, the character of whose rope is so well known in this country, as well as all parts of the Continent. Capt. Duxford, of H.M.S. *Hastings*, and a number of other gentlemen connected with shipping, were present to witness the experiments, all of which were considered highly satisfactory, and in every respect sustained the reputation of the manufacturers. The following are the results of the experiments:—

8 in. rope bore 7 tons WITHOUT BREAKING.

Circumference and breaking strain.

Size.	Hutchings and Co.'s wire-rope for ships' rigging. Tested Feb. 27, 1861.	Newall and Co.'s Test of Oct. 29, 1860.	Garnock, Bibby, and Co.'s Test, Oct. 29, 1860.
2	5 tons 15 cwt.	—	8 tons 16 cwt.
2½	11 " 14 "	—	—
3	16 " 10 "	—	18 " 5 "
3½	22 " 8 "	—	—
4	23 " 10 "	16 " 10 "	—
4½	29 " 10 "	18 " 15 "	—
5	37 " 15 "	—	26 " 10 "

N.B.—The 2, 3½, and 4 in. ropes were the actual sizes tested. The remaining sizes and strains are comparative.

The above tests certified by Mr. McDonald the Superintendent of the Corporation Testing Works, Liverpool.

THE ABOVE ROPES ARE FOR COLLIER USE.

2 in. rope bore 15 cwt.

3½ in. rope bore 26 tons 10 cwt.

## THE MINING SHARE LIST.

## DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
4000 Bedford United (copper), Tavistock	..	3 6 8..	5% ..	5% 5%	.. 12 3 6.. 0 4 0	— Mar. 1861
240 Boscan (tin), St. Just	..	20 10 0..	50 ..	..	.. 30 10 0.. 1 10 0	— Feb. 1861
200 Totalach (tin, copper), St. Just	..	91 5 0..	190 ..	..	.. 443 5 0.. 2 10 0	— Feb. 1860
2000 Broniford (lead), Cardiganshire [L.]	..	4 0 0..	754 ..	..	.. 0 4 0.. 2 0 0	— Jan. 1860
2000 Brynford Hall (lead), Flintshire	..	12 10 0..	26 ..	..	.. 14 0 2.. 2 10 0	— Oct. 1860
1000 Carn Brea (copper, tin), Illogan	..	15 0 0..	90 ..	85 90	.. 283 10 0.. 2 0 0	— Mar. 1861
2048 Carnorth (tin, St. Just)	..	3 10 0..	31 ..	..	.. 0 19 6.. 0 3 0	— Sept. 1860
200 Cefn Cwm Brwyno (lead), Cardiganshire	..	33 0 0..	31 ..	..	.. 9 0 0.. 4 0 0	— April. 1861
5000 Connorce (copper, sulphur) [L.] [E.]	..	1 0 0..	214 ..	478..	.. 0 9 0.. 0 9 0	— July. 1860
19000 Copper Miners of England	..	25 0 0..	25 ..	..	.. 7 1/4 per cent.	— Half-yearly.
350000 Ditto ditto (stock)	..	105 0 0..	24 ..	..	.. 1 percent.	— Half-yearly.
1055 Craddock Moor (copper), St. Cleer*	..	8 0 0..	27 ..	..	.. 5 2 0.. 0 4 0	— Mar. 1861
867 Cwrt Erynn (lead) Cardiganshire*	..	7 10 0..	161 ..	..	.. 4 8 0.. 0 15 0	— Mar. 1861
128 Cwmystryd (lead), Cardiganshire*	..	60 0 0..	240 ..	..	.. 222 10 0.. 5 0 0	— Mar. 1861
280 Derwen Mines (sl.-lead), Durham	..	300 0 0..	180 ..	..	.. 137 0 0.. 10 0	— June. 1860
124 Devon Gt. Con. (cop.), Tavist.* [S.E.]	..	25 10 0..	345 ..	..	.. 746 0 0.. 7 0	— Mar. 1861
358 Dolcoath (copper, tin), Camborne*	..	128 17 6..	490 ..	490 510	.. 618 10 0.. 8 0 0	— April. 1861
512 East Bassett (lead), Redruth [S.E.]	..	12 10 0..	102 1/2 ..	102 1/2 ..	.. 512 10 0.. 5 0 0	— Mar. 1861
6144 East Cadron (copper), St. Cleer [S.E.]	..	2 14 6..	20 ..	15% 19 1/2 ..	.. 7 6 0.. 0 5 0	— Mar. 1861
309 East Darren (lead), Cardiganshire*	..	33 0 0..	67 ..	..	.. 75 10 0.. 1 0 0	— April. 1861
2048 East Welsh Lovell (tin), Wendron	..	3 10 0..	7 ..	..	.. 0 5 0.. 0 5 0	— July. 1860
1400 Eynam Mining Co. (lead), Derbyshire	..	5 0 0..	38 ..	..	.. 19 13 4.. 1 0 0	— Dec. 1860
4940 Fowey Consols (copper), Tywardreath	..	4 0 0..	5 ..	..	.. 41 9 3.. 0 2 6	— June. 1860
256 Foxdale, Isle of Man, Limited (lead)	..	25 0 0..	35 ..	..	.. 61 8 8.. 1 0 0	— Dec. 1860
5000 Frank Mills (lead), Devon	..	3 18 6..	41 ..	..	.. 0 5 0.. 0 2 6	— Mar. 1861
486 Grampier and St. Aubyn (cop.) [S.E.]	..	48 10 0..	26 ..	..	.. 23 0 0.. 1 0 0	— July. 1860
6000 Great South Tolpuddle [S.E.] Redruth	..	14 6..	6 ..	43% 5 ..	.. 7 13 6.. 0 5 0	— Feb. 1861
1728 Great Wheal Fortune, Breage	..	18 6..	9 1/2 ..	10 11 ..	.. 0 10 0.. 0 10 0	— Mar. 1860
5908 Great Wh. Vor (tin, ep.), Helston [S.E.]	..	40 0 0..	7 ..	..	.. 0 5 0.. 0 5 0	— Mar. 1861
1024 Herodsfoot (ld.), near Liskeard [S.E.]	..	8 10 0..	38 ..	27 29	.. 12 10 0.. 1 10 0	— Feb. 1861
200 Horward United (lead), Flintshire	..	37 0 0..	31 ..	..	.. 3 0 0.. 1 10 0	— July. 1860
1000 Hibernal Mine Company	..	92 6 2..	— ..	..	.. 6 15 0.. 0 15 0	— Feb. 1861
169 Levant (copper, tin), St. Just	..	2 10 0..	125 ..	..	.. 1991 0.. 5 0 0	— May. 1860
400 Lisburn (lead), Cardiganshire, Wales*	..	18 15 0..	125 ..	..	.. 370 10 0.. 3 0 0	— April. 1861
9000 Marks Valley (copper), Caradon	..	4 10 6..	71 ..	63% 7% ..	.. 0 16 0.. 0 5 0	— Mar. 1861
5000 Mendip Hills (lead) [L.], Somerset	..	3 15 0..	134 ..	..	.. 3 1 0.. 0 2 6	— May. 1860
1800 Minera Mining Co. (L.), (d.), Wrexham	..	25 0 6..	180 ..	..	.. 65 15 9.. 3 17 6	— Feb. 1861
2000 Mining Co. of Ireland (cop., lead, coal)	..	7 0 0..	141 ..	141% ..	.. 14 0 11.. 0 4 10	— Jan. 1860
640 Mount Pleasant, Mold	..	4 0 0..	25 ..	..	.. 12 15 7.. 1 0 0	— Mar. 1861
1366 North Grambler, Redruth	..	2 7 6..	7 ..	..	.. 0 10 0.. 0 10 0	— Mar. 1861
6000 North Great Work, Breage	..	1 3 0..	41 ..	..	.. 0 2 0.. 0 2 0	— May. 1860
5000 Orsadd (lead), Flintshire	..	0 8 0..	114 ..	..	.. 0 6 6.. 0 9 0	— Mar. 1861
6400 Par Consols (cop.), St. Blazey [S.E.]	..	1 2 6..	91 ..	81% 9% ..	.. 35 19 6.. 0 5 0	— Mar. 1861
200 Parys Mines (copper), Anglesey [L.]	..	59 0..	30 ..	..	.. 5 0 0.. 0 5 0	— Jan. 1860
200 Phoenix (copper, tin), Linkinhorne	..	100 0 0..	425 ..	..	.. 394 10 0.. 50 0	— Nov. 1860
1722 Polberro (tin), St. Agnes	..	..	5 ..	..	.. 6 9 6.. 0 15 0	— April. 1861
1120 Providence (tin), Uny Lelant [S.E.]	..	10 6 7..	39 ..	39 41 ..	.. 58 15 0.. 1 9 0	— Feb. 1861
16 Rhosneigr	..	50 0 0..	— ..	..	.. 1250 0.. 0 100 0	—
512 Rosewarne United (cop., tin), Gwinear	..	15 0 0..	24 ..	..	.. 33 10 0.. 1 0 0	— Sept. 1860
512 South Cadron (cop.), Redruth, Cornwall	..	1 5 0..	305 ..	300 305 ..	.. 341 0 0.. 5 0 0	— Mar. 1861
512 South Tolpuddle (lead), Llandilo	..	8 0 0..	41 ..	40 41 ..	.. 102 10 0.. 1 0 0	— Mar. 1861
496 South Wheal Frances, Illogan [S.E.]	..	18 18 9..	147 1/2 ..	135 140 ..	.. 353 5 0.. 1 10 0	— Mar. 1861
280 Speaner Moor (tin, copper), St. Just	..	31 17 9..	47 1/2 ..	..	.. 18 15 0.. 1 10 0	— Mar. 1861
910 St. Ives Consols (tin), St. Ives	..	8 0 0..	36 ..	..	.. 483 5 0.. 1 0 0	— Feb. 1861
9600 Tamar Con. (sl.-id.), Bealstock [S.E.]	..	4 10 0..	2 1% ..	5 6 0 ..	.. 2 6 0.. 0 5 0	— Jan. 1861
6000 Tincoff (cop.), Illogan [S.E.]	..	9 0 0..	54 ..	53% 58% ..	.. 10 8 6.. 0 5 0	— Feb. 1861
6000 Tovalden (copper), Marazion	..	..	91 ..	..	.. 13 16 0.. 0 3 0	— Mar. 1861
572 Tralyon Consols (tin), St. Ives	..	11 10 0..	12% 11% 12 1/2% ..	7 0 ..	.. 0 10 0.. 0 10 0	— Sept. 1860
200 Trumpet Consols (tin), near Helston	..	57 10 0..	100 ..	..	.. 46 4 0.. 0 4 0	— Feb. 1861
1024 Tunbridge Consols (tin), Wendron	..	11 13 10..	17 ..	..	.. 8 15 0.. 1 0 0	— Jan. 1861
6000 West Bassett (copper), Illogan [S.E.]	..	10 0 0..	18 ..	17 18 ..	.. 21 2 0.. 0 10 0	— Oct. 1860
60 West Burton Gill (lead), Yorkshire	..	60 0 0..	75 ..	71 73 ..	.. 94 11 3.. 2 10 0	— Mar. 1861
1024 West Cadron (cop.), Liskeard [S.E.]	..	5 0 0..	62 ..	..	.. 45 0 0.. 1 0 0	— May. 1860
256 West Damas (copper), Gwinear	..	37 0 0..	62 ..	..	.. 12 12 0.. 0 2 6	— Mar. 1861
6000 West Fowey Consols (tin and copper), Trelawnyd	..	7 10 0..	5 ..	..	.. 12 12 0.. 0 3 0	— Mar. 1861
400 W. Wh. Seton (cop.), Camborne [S.E.]	..	47 10 0..	350 ..	345 355 ..	.. 298 0 0.. 0 10 0	— April. 1861
512 Wheal Bassett (copper), Illogan [S.E.]	..	5 2 6..	100 ..	..	.. 568 10 0.. 2 0 0	— April. 1861
256 Wheal Butler (cop.), Redruth [S.E.]	..	5 0 0..	112% ..	107% 112% ..	.. 927 0 0.. 2 0 0	— Mar. 1861
8000 Wheal Clifford (cop.), Gwinear [S.E.]	..	— ..	180 ..	180 190 ..	.. 89 10 0.. 5 0 0	— April. 1861
2000 Wheal Falmouth and Sperrys	..	2 5 0..	8 ..	..	.. 10 0 0.. 0 10 0	— Feb. 1861
1200 Wheal Friendship (copper), Devon	..	60 0 0..	90 ..	..	.. 2400 10 0.. 5 0 0	— Feb. 1861
512 Wheal Jane (silver-lead), Kea	..	3 10 0..	18 ..	..	.. 10 10 0.. 1 0 0	— Feb. 1861
1242 Wheal Kitty (tin), Uny Lelant [S.E.]	..	1 7 2..	12% 11% 12 1/2% ..	8 0 0..	.. 0 10 0.. 0 10 0	— Sept. 1860
4800 Wheal Ludcott (lead), St. Ives	..	2 10 8..	3% 3% 3% ..	1 4 0 0..	.. 0 4 0.. 0 4 0	— Dec. 1860
896 Wheal Margaret (tin), Uny Lelant [S.E.]	..	9 17 6..	47 48 ..	..	.. 66 10 0.. 1 10 0	— Feb. 1861
100 Wheal Mary (tin), Lelant	..	36 2 6..	440 ..	..	.. 280 5 0.. 7 0 0	— June. 1860
1624 Wheal Mary Ann (ld.), Menheniot [S.E.]	..	8 0 0..	13 ..	19 13 ..	.. 53 7 6.. 0 10 0	— Mar. 1861
5000 Tamar Con. (sl.-id.), Bealstock [S.E.]	..	4 10 0..	285 ..	..	.. 270 13 0.. 7 0 0	— Feb. 1861
4076 Devon and Cornwall (copper)	..	4 16 3..	6 ..	..	.. 10 0 0.. 0 2 6	— Mar. 1861
672 Ding Dong (tin), Gulval	..	37 14 0..	11% 8 10 ..	..	.. 16 7 6.. 1 10 0	— Mar. 1861
1280 Drake Walls (tin, copper),						